

Summary of W.A. ...

# ANNUAL PUBLIC HEALTH REPORT



OF THE

## PROVINCE OF ASSAM

FOR THE YEAR

### 1924

BY

MAJOR J. B. HANAFIN, C.I.E., F.R.C.S.I., D.P.H., D.T.M.&H. (CAMB.), I.M.S.,  
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FROM

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(CAMB.), I.M.S.,  
OFFG. DIRECTOR OF PUBLIC HEALTH, ASSAM,

TO

THE SECOND SECRETARY TO THE GOVERNMENT OF ASSAM.

*Dated Shillong, the 12th May 1925.*

SIR,

I HAVE the honour to submit herewith the Annual Public Health Report of the Province of Assam for the year 1924.

Your obedient servant,

J. B. HANAFIN, *Major, I.M.S.,*

*Offg. Director of Public Health, Assam.*

Enclosures :—

1 Report.

13 Statements.

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# ANNUAL PUBLIC HEALTH REPORT

OF THE

## PROVINCE OF ASSAM

FOR THE YEAR

1924.

### SECTION I.

#### METEOROLOGY.

The following brief summary of the chief meteorological features of the province during the year 1924 has been kindly furnished by the Director-General of Observatories :—

*The cold weather period, January and February.*—In January rainfall was in defect by 40 per cent. Several western disturbances affected the weather during February but the total rainfall of the month remained in moderate defect. Cloud proportion and humidity were nearly normal except in February where the former was in defect. Maximum temperature was slightly higher than usual in February.

*The hot weather period, March to May.*—Only 18 per cent. of the normal rainfall was received in the month of March and in agreement with this abnormal feature both cloud proportion and humidity were in defect, and temperature remained higher than usual. The mean maximum of the month was about 7° above normal. There was an improvement in the next two months during which period rainfall was normal. Cloud proportion and humidity were nearly normal in both the months, but temperature was somewhat higher than usual in April.

*The monsoon period, June to September.*—During this period rainfall was nearly normal in every month, the departures from normal being 11 per cent. defect in June, 10 per cent. excess in July, nil in August and 9 per cent. excess in September. Cloud proportion, humidity and temperature did not differ from the average to any appreciable extent in any of the months.

*The retreating monsoon period, October to December.*—Rainfall was normal in October. In November two storms and a depression from the Bay introduced spells of very wet weather in the province so that the total rainfall of the month exceeded four times the normal amount. No rain was recorded at any of the observatory stations in December. Skies were more clouded than usual in November and December and humidity was nearly normal in all the three months. Maximum temperature was on the mean of the month below normal in November while the minimum was above it throughout the period.

The common rice, which is the staple food of the population of this province, was in different districts sold at almost the same price as in the year 1923, the average quantity obtainable per rupee being 7 seers and 1 chhatak, against 7 seers and 14 chhataks in the preceding year.

Prices of food grains and their connection with vital occurrences.

### SECTION II.

#### EUROPEAN ARMY.

(No remarks).

### SECTION III.

#### NATIVE ARMY.

(No remarks).

## SECTION IV.

## JAILS.

(No remarks).

## SECTION V.

## GENERAL POPULATION.

*Vital Statistics.*

2. The report deals with the plains districts of the province, the population of which at the Census of 1921 was 6,852,242. This has been used as the basis for calculation of ratios in the report. Registration in selected areas of the hill districts is shown separately in paragraph 10 of this report.

General census figures. Provincial birth and death rates. Comparison with other provinces.

The birth-rate of the province during 1924 was 31·04 per mille and is compared below with the rates recorded for other provinces of India :—

| Provinces.                          | Birth-rate. |       |       |
|-------------------------------------|-------------|-------|-------|
|                                     | 1918-22.    | 1923. | 1924. |
| 1                                   | 2           | 3     | 4     |
| Assam ... ..                        | 28·75       | 28·82 | 31·04 |
| Bengal ... ..                       | 28·7        | 29·9  | 29·45 |
| Bihar and Orissa ... ..             | 34·2        | 37·02 | 35·7  |
| Central Provinces ... ..            | 38·05       | 45·63 | 44·18 |
| Madras ... ..                       | 28·0        | 33·1  | 34·89 |
| Burma ... ..                        | 31·19       | 29·52 | 27·40 |
| Bombay ... ..                       | 30·95       | 35·57 | 35·60 |
| United Provinces ... ..             | 32·17       | 36·04 | 34·72 |
| Punjab ... ..                       | 39·3        | 43·16 | 40·05 |
| North-West Frontier Province ... .. | 27·3        | 27·6  | 27·0  |

The birth-rate of Assam was lower than that of other provinces with the exception of Bengal, North-West Frontier Province and Burma.

The death-rate of Assam for the year 1924 was 27·30 per mille and is compared below with the rates recorded for other provinces of India:—

| Provinces.                         | Death-rate. |       |       |
|------------------------------------|-------------|-------|-------|
|                                    | 1918-22.    | 1923. | 1924. |
| 1                                  | 2           | 3     | 4     |
| Assam ... ..                       | 32·77       | 23·54 | 27·30 |
| Bengal ... ..                      | 31·9        | 25·5  | 25·86 |
| Bihar and Orissa ... ..            | 37·2        | 25·04 | 29·1  |
| Central Provinces ... ..           | 51·85       | 30·53 | 22·59 |
| Madras ... ..                      | 26·6        | 22·2  | 24·53 |
| Burma ... ..                       | 27·93       | 20·81 | 21·54 |
| Bombay ... ..                      | 39·77       | 25·89 | 27·63 |
| United Provinces ... ..            | 45·17       | 23·37 | 28·29 |
| Punjab ... ..                      | 36·4        | 30·94 | 43·43 |
| North-West Frontier Province... .. | 34·0        | 23·7  | 31·0  |



The total number of deaths were 187,127 for 1924, as against 161,332 for 1923. The death-rate of Assam compares favourably with the rates recorded for other provinces notwithstanding a year of epidemic cholera and endemic *kala-azar*.

3. The total number of births in the province during the year was 212,755, as compared with 197,518 in the previous year. The provincial birth-rate for the year 1924 was 31·04, as compared with 28·82 in 1923, and 28·43 in 1922. The rate of increase of the population, *i.e.*, the excess of birth-rate over the death-rate was 3·74, as compared with 3·28 in the previous year. A higher birth-rate and lower death-rate resulting in the natural increase of population of 10·33 in the Sibsagar district need special mention. The increase in the birth-rate shows a recovery from the conditions prevailing in the years 1918 and 1919 which were adversely affected by the influenza epidemic and its aftermath.

The highest birth-rate (39·26) was recorded in the Goalpara district. The lowest district birth-rate was recorded in Lakhimpur (26·87). Nowgong district which recorded the rate of 23·19 in 1923 has returned a higher rate of 26·99 which is satisfactory notwithstanding a wide-spread prevalence of *kala-azar* in this district.

4. The general birth-rate for the towns in the province was 31·23, as compared with 29·23 in 1923. The majority of the towns reported rates which were near the mean figures, the exceptions of high and low figures were few and did not greatly affect the average rate. The towns of Hailakandi, Doom-Dooma and Maulvibazar which returned low rates of 16·60, 17·21 and 18·89, respectively, in 1923, have returned higher rates of 21·99, 24·09 and 23·09, respectively, in 1924.

5. During the year under report 208,096 births were registered in rural areas yielding a ratio of 31·04 per mille, as compared with 193,157 and 28·81, respectively, in 1923.

Amongst the rural circles individually, Bijni Duar circle in Goalpara district reported the highest rate of 51·69. Other circles reporting high rates were Mankachar (47·94), Sidli circles (44·33), Dhubri (42·93) and Kokrajhar (41·89) in the Goalpara district, Kalaigaon (47·90) in the Darrang district, Silchar (43·04) in the Cachar district, Habiganj (42·09) in the Sylhet district and Lumding (41·61) in the Nowgong district. The rates reported from Margherita (5·05) and Jaipur (11·98) in the Lakhimpur district, Majuli (15·32) in Sibsagar, Jamunamukh (15·64) in Nowgong and Dhekiajuli (15·78) in Darrang were abnormally low.

6. Deaths numbered 187,127 giving a ratio of 27·30 per mille, against 23·54 in 1923 and 29·34, the quinquennial average. Cholera which prevailed in endemic form throughout Assam generally became epidemic in certain districts and was mainly the cause of this increase. Nowgong, Sibsagar and Lakhimpur districts from which no cholera epidemic was reported in 1924, recorded rates which were either equal to or lower than those recorded in these districts in the preceding year. Goalpara, recorded the highest rate of 32·16, and was followed by Cachar (31·77), Sylhet (29·77) and Kamrup (29·67), all due to cholera and the lowest rate of 17·98 was recorded in the Sibsagar district.

7. The total number of deaths recorded in towns in 1924 aggregated 3,964, representing a death-rate of 26·57, as compared with 3,486 and 23·36 in 1923 and 24·31, the quinquennial average. The highest death-rate, *viz.*, 36·49 was recorded in Habiganj. Barpeta coming next with 35·72. Then followed Gauhati (33·86) and Doom-Dooma (30·98). In all cases fevers were the common cause of high mortality, cholera and respiratory diseases in the case of Barpeta and Doom-Dooma, dysentery and diarrhoea in the case of Habiganj, and small-pox in the case of Gauhati being the additional causes. The towns which reported low death rates were Tinsukia (14·93), Hailakandi (16·16), Silchar (18·23) and Maulvibazar (19·19).

8. The death-rate for rural areas for the year 1924 was 27·32, as compared with 23·54 in the preceding year and 29·46, the quinquennial average.

Registration circles considered individually the Bajali circle (49·59) in Kamrup reported the highest death-rate. Kalaigaon (47·71) in Darrang, Dudnai (41·54), Guma (41·31) and Golakganj (40·38) in Goalpara and Gowainghat (40·27) in Sylhet also reported high rates. In certain villages in the Bajali circle cholera broke out in an epidemic form in the months of April, May, June and July which accounted for the high death-rate in that circle. Fevers were responsible for the high death-rates

in Kalaigaon and Gowainghat and cholera and fevers in Dudnai, Guma and Golakganj. Among the circles returning low death-rates, the most conspicuous were Dergaon (15·35), Jorhat (14·13), Amguri (13·84), Sonari (12·34) and Majuli (7·43) in Sibsagar, Jamunamukh (14·78) in Nowgong, Gohpur (14·18) and Dhekiajuli (13·60) in Darrang, Dhemaji (12·50), Dibrugarh (11·73), Jaipur (10·98) and Margherita (4·40) in Lakhimpur. In some of the above places the abnormally low death-rates may be due to better health conditions prevailing during the year but in others it cannot be accounted for otherwise than defective registration.

9. The subjoined table shows the results of the enquiries conducted by the Registration in compulsory areas. Vaccination Inspecting Staff in compulsory urban areas to test the accuracy of vital statistics during the non-vaccination season :—  
Prosecutions under Act IV (B. C.) of 1873.

| Municipalities.     | Unregistered vital occurrences detected during 12 months from October 1923 to September 1924. |         | Recorded vital occurrences during 12 months from October 1923 to September 1924. |         | Percentage of omissions. |         |
|---------------------|---|---------|--|---------|--------------------------|---------|
|                     | Births.   | Deaths. | Births.  | Deaths. | Births.                  | Deaths. |
| 1                   | 2   | 3       | 4  | 5       | 6                        | 7       |
| Silchar ...         | 2   | ...     | 258  | 194     | ·77                      | ...     |
| Hailakandi ...      | 6   | ...     | 49   | 35      | 10·91                    | ...     |
| Sylhet ...          | 4   | ...     | 483  | 449     | ·82                      | ...     |
| Karimganj ...       | 9   | 6       | 94   | 91      | 8·73                     | 6·19    |
| Maulvi Bazar ...    | 14  | ...     | 58   | 58      | 19·44                    | ...     |
| Habiganj ...        | 2   | ...     | 224  | 195     | ·88                      | ...     |
| Sunamganj ...       | 12  | 5       | 149  | 105     | 7·45                     | 4·54    |
| Dhubri ...          | 9   | 7       | 239  | 182     | 3·63                     | 3·70    |
| Goalpara ...        | 12  | 8       | 208  | 165     | 5·45                     | 4·62    |
| Gauripur ...        | 35  | 20      | 117  | 89      | 23·03                    | 18·35   |
| Gauhati ...         | 24  | 25      | 495  | 519     | 4·62                     | 4·60    |
| Barpeta ...         | 5   | 4       | 568  | 393     | ·87                      | 1·01    |
| Tezpur ...          | 16  | 15      | 203  | 212     | 7·31                     | 6·61    |
| Mangaldai ...       | 5   | 5       | 25   | 16      | 16·66                    | 23·81   |
| Nowgong ...         | 7   | 4       | 203  | 188     | 3·33                     | 2·08    |
| Sibsagar ...        | 22  | 12      | 186  | 96      | 10·58                    | 11·11   |
| Nazira ...          | ...   | 1       | 105  | 68      | ...                      | 1·44    |
| Jorhat ...          | 5   | 2       | 197  | 142     | 2·47                     | 1·39    |
| Golaghat ...        | 18  | 12      | 99   | 72      | 15·38                    | 14·28   |
| Dibrugarh ...       | 14  | 8       | 392  | 292     | 3·45                     | 2·67    |
| North-Lakhimpur ... | 12  | 2       | 33   | 42      | 26·67                    | 4·54    |
| Doom-Dooma ...      | ...   | ...     | 26   | 37      | ...                      | ...     |
| Tinsukia ...        | 9   | 2       | 68   | 39      | 11·69                    | 4·88    |
| Shillong ...        | ...   | ...     | 557  | 273     | ...                      | ...     |
| Total ...           | 242   | 138     | 5,036  | 3,952   | 4·58                     | 3·37    |

380 omissions were detected, 336 prosecutions were instituted and 266 convictions were obtained.

The average fine inflicted for failure to register an occurrence of a birth or death was Re. 0-12-0 in 1924 as compared with Re. 1-3-0 in the preceding year: A nominal fine of annas four or thereabout was inflicted in Sunamganj, Gauripur, Gauhati, Nazira and North-Lakhimpur.

A maximum fine of Rs. 5 in few suitable cases might produce a more deterrent effect.

Registration in hill districts.

10. The appended table shows the recorded birth and death-rates in hill districts :—

| Districts.                     | 1924.          |             | 1923.       |             |
|--------------------------------|----------------|-------------|-------------|-------------|
|                                | Birth-rate.    | Death-rate. | Birth-rate. | Death-rate. |
| 1                              | 2              | 3           | 4           | 5           |
| Khasi and Jaintia Hills ... .. | 27·88          | 19·19       | 27·31       | 16·59       |
| Naga Hills ... ..              | 17·82          | 21·47       | 16·00       | 16·00       |
| Lushai Hills ... ..            | 44·63          | 28·98       | 41·09       | 30·15       |
| Garro Hills ... ..             | 27·58          | 25·14       | 23·64       | 22·60       |
| Sadiya Frontier Tract ... ..   | Not available. |             |             |             |

### VITAL STATISTICS.

Registration in the Hill Districts is confined to a few areas and cannot be held to be representative of the state of these districts.

The areas under partial registration comprise a total population of 207,058 as follows :—

|                         |     |     |     |     |                 |
|-------------------------|-----|-----|-----|-----|-----------------|
| Khasi and Jaintia Hills | ... | ... | ... | ... | 54,911          |
| Naga Hills              | ... | ... | ... | ... | 4,936           |
| Lushai Hills            | ... | ... | ... | ... | 98,406          |
| Garro Hills             | ... | ... | ... | ... | 48,805          |
| Sadiya Frontier Tract   | ... | ... | ... | ... | Not obtainable. |

The death-rate of Khasi and Jaintia Hills district was 19·19 in 1924, as compared with 16·59 in the preceding year, cholera, dysentery and diarrhoea and fever contributing to the increase. There were 33 deaths from cholera, the infection being imported from the Sylhet district, through the lines of communication. The infection was also introduced in the Shillong Municipality where 30 cases and 22 deaths were reported in the months of June and July. Measures including cholera inoculation for checking the spread of the disease were promptly adopted by the Civil Surgeon. Experience of this epidemic shows that the present segregation hospital at Mawlai cannot adequately meet the needs of this growing station, Shillong. The Civil Surgeon has submitted proposals to the Municipality for its extension and necessary outfit, asking for their early sanction so that work may be completed before the onset of rains. The birth and death-rates of the Shillong Municipality were 31·33 and 15·46, respectively, in 1924, as compared with 32·78 and 12·79, respectively, in the preceding year. Five cases of typhoid were reported during the year. But for malaria, the general health of the Naga Hills district in the year 1924 was reported to have been good. In this district registration is carried out in the headquarters town of Kohima and a rural circle of Dimapur whose total population is 4,936 only. A proposal for an anti-malaria scheme for the town of Kohima comprising clearance of jungle all round the station and clearing of all *nalas*, so that they can be easily oiled and draining other areas where water stagnates has been submitted to Government after the close of the year. The scheme also includes provision for wire mesh mosquito net for all bungalows and barracks in the station.

The rise in the birth-rate and fall in the death-rate in the year under report of the Lushai Hills district is satisfactory. The Commissioner, Surma Valley and Hill Division, in forwarding the report observes that "the harvest of 1923 was fairly good, the people had during 1924 sufficient food; the rainfall was well distributed, but November was abnormally wet; the harvest suffered from the later rain." There was no cholera or small-pox during the year except that there were a few cases of choleric diarrhoea in Aijal and its surrounding villages. Special attention is being paid for the treatment of people suffering from venereal diseases in various dispensaries in the district in which this disease is prevalent and where accommodation is inadequate temporary huts are provided.

Out of a total mortality rate of 25.14 in the Garo Hills district, 21.78 is attributed to fevers. Malaria and *kala-azar* are much prevalent in this district. Forty-six deaths from cholera, all sporadic in nature were reported, the infection being imported from the neighbouring plains district. There is also prevalence of leprosy in this district and the Deputy Commissioner is in favour of having a small Garo Leper Asylum at Tura for their treatment. The registration of births and deaths which is confined to the plains portion only of the district is being extended throughout the district.

Vital statistics in the Sadiya Frontier Tract are collected in the Sadiya town, one tea garden, two saw mills and some Assamese villages only, but the population of these areas is not available. The returns of civil dispensaries however show that the year was fairly healthy. The chief prevailing diseases are goitre and malaria. The former is widespread throughout the district and latter most marked in the foot of the hills. No indigenous *kala-azar* has been found in this district.

11. The subjoined table shows the birth and death-rates reported from tea estates

Registration in tea gardens.

during the year 1924:—

| Districts.       | Birth-rate. | Death-rate. |
|------------------|-------------|-------------|
| 1                | 2           | 3           |
| Cachar ... ..    | 31.77       | 28.49       |
| Sylhet ... ..    | 31.05       | 22.82       |
| Goalpara ... ..  | 38.98       | 27.92       |
| Kamrup ... ..    | 8.82        | 15.62       |
| Darrang ... ..   | 26.33       | 19.78       |
| Nowgong... ..    | 22.07       | 21.65       |
| Sibsagar ... ..  | 30.63       | 20.33       |
| Lakhimpur ... .. | 28.72       | 24.56       |
| Total ... ..     | 29.49       | 23.02       |

The natural increase of population in tea gardens during the year was 6.47 which is slightly lower than that in the preceding year, and is much higher than the provincial rate. The death-rate was 23.02 as against 21.9 for 1923 and was lower than the provincial average which was 27.30. In all districts the death-rate was lower than the birth-rate except in Kamrup where reporting remains as defective as in the year 1923. In two of the gardens in this district *kala-azar* is known to exist. Statistical returns from the tea gardens in this district are defective. One hundred and forty-three deaths from *kala-azar* were reported from tea estates in the province during the year, of which 64 were from Nowgong and 53 from Darrang. Kuturi tea estate in the Nowgong district was declared *kala-azar* infected in the year and was inspected by the Assistant Surgeon on *kala-azar* duty.

12. The total number of births and deaths recorded within railway limits in the year 1924 were 98 and 417, respectively, as compared with 91 and 354 respectively in the preceding year. Of the 417 deaths, 113 were due to dysentery and diarrhoea and 95 to respiratory diseases.

13. The highest birth-rates of 3.32 and 3.23 were recorded in the months of December and January respectively, and the lowest birth-rates in July and June 1.95 and 1.96, respectively. This corresponds to previous years.

The highest death-rates of 2.71 and 2.69 were recorded in the months of November and December respectively, in which cholera was prevalent in epidemic form in some districts, and the lowest rate of 1.71 in February when there was no epidemic disease.

14. The details of registration according to age, sex and class are furnished in the annual forms Nos. II, IV and V attached to this report.

As usual the total combined mortality amongst males was higher than that amongst females in the ratio of 112 to 100. The mortality by age groups followed the course of previous years, the mortality in the age group "under one year" being the highest and that in the age group "ten to fifteen years" being the lowest.

The death-rates according to class in 1924 were in the following order:—

|               |     |     |     |     |     |       |
|---------------|-----|-----|-----|-----|-----|-------|
| Other classes | ... | ... | ... | ... | ... | 33.94 |
| Muhammadans   | ... | ... | ... | ... | ... | 28.86 |
| Hindus        | ... | ... | ... | ... | ... | 25.68 |
| Buddhists     | ... | ... | ... | ... | ... | 18.68 |
| Christians    | ... | ... | ... | ... | ... | 15.18 |

Child welfare centre has been started in a few centres. It is proposed to initiate these in the other Municipalities in the province.

The total infant (children under 1 year) mortality per thousand births registered during 1924 was 184.75, as compared with 179.50 in 1923, and the rate for Assam is compared below with those of other provinces in India:—

|                              |     |     |     |     |     |        |
|------------------------------|-----|-----|-----|-----|-----|--------|
| Assam                        | ... | ... | ... | ... | ... | 184.75 |
| Bengal                       | ... | ... | ... | ... | ... | 184.17 |
| Bihar and Orissa             | ... | ... | ... | ... | ... | 158.4  |
| Central Provinces            | ... | ... | ... | ... | ... | 234.94 |
| Madras                       | ... | ... | ... | ... | ... | 179.20 |
| Burma                        | ... | ... | ... | ... | ... | 187.86 |
| Bombay                       | ... | ... | ... | ... | ... | 191.17 |
| United Provinces             | ... | ... | ... | ... | ... | 191.99 |
| Punjab                       | ... | ... | ... | ... | ... | 212.57 |
| North-West Frontier Province | ... | ... | ... | ... | ... | 161.4  |

This compares favourably with other provinces.

15. The vaccination inspecting staff checked 52,014 entries of births and deaths in village registers and detected 2,967 omissions. The percentage of omissions detected was 5.70 of the total examined, as compared with 6.35 in the preceding year. The percentage of omissions was highest in the district of Goalpara (15.06) followed by Kamrup (12.93) and Darrang (10.39) and the lowest in Nowgong (1.31).

16. There was no change in the agency for the collection and registration of vital statistics, while experiment under which four rewards of Rs. 20 each are granted to selected gaonburas in each subdivision for their good work in collection of vital statistics is still being continued in some districts, it has been discontinued in others as it is thought that it is very difficult to select the most deserving gaonburas, the mauzadars recommendation not being always reliable. Vital statistics, as previously, were collected in rural areas by police, chawkidars in Cachar, Sylhet and Goalpara districts and by gaonburas in Kamrup, Darrang, Nowgong, Sibsagar and Lakhimpur.

## SECTION VI.

### HISTORY OF CHIEF DISEASES.

17. The following table shows the death-rate per 1,000 from each of the chief causes of mortality during the year 1924, compared with the mean of the decennium ending 1923:—

| Diseases.                  | 1914-23. |        |           | 1924.  |        |           |
|----------------------------|----------|--------|-----------|--------|--------|-----------|
|                            | Urban.   | Rural. | Combined. | Urban. | Rural. | Combined. |
| 1                          | 2        | 3      | 4         | 5      | 6      | 7         |
| Cholera                    | 1.46     | 2.09   | 2.09      | 1.15   | 2.83   | 2.79      |
| Small-pox                  | .42      | .41    | .41       | .20    | .24    | .24       |
| Plague                     | ...      | ...    | ...       | ...    | ...    | ...       |
| Fevers                     | 6.73     | 16.54  | 16.33     | 9.45   | 16.67  | 16.52     |
| Dysentery and diarrhoea... | 3.19     | 1.90   | 1.93      | 3.63   | 1.58   | 1.62      |
| Respiratory diseases       | 3.31     | 2.22   | 2.25      | 2.97   | .93    | .98       |
| Injuries                   | .48      | .29    | .29       | .75    | .28    | .29       |
| All other causes           | 6.93     | 5.21   | 5.24      | 8.40   | 4.76   | 4.84      |
| Total                      | 22.54    | 28.70  | 28.56     | 26.57  | 27.32  | 27.30     |

From the above table it will be seen that there was a total increase in mortality under "Urban" and decrease under "Rural," in the year 1924, as compared with the decennial average. There was a greater prevalence of cholera and less prevalence of small-pox and respiratory diseases in the year under report.

### INFLUENZA.

The total number of deaths recorded under influenza during the year 1924 was 169, as compared with 554 in the preceding year. No epidemic of the disease was reported from any district.

### 18.—CHOLERA.

| Districts. | Death-rate per mille. |       |
|------------|-----------------------|-------|
|            | 1914-23.              | 1924. |
| 1          | 2                     | 3     |
| Cachar     | 1.92                  | 5.74  |
| Sylhet     | 2.18                  | 3.20  |
| Goalpara   | 1.73                  | 2.75  |
| Kamrup     | 3.16                  | 7.09  |
| Darrang    | 2.95                  | .55   |
| Nowgong    | 2.49                  | .29   |
| Sibsagar   | 1.58                  | .20   |
| Lakhimpur  | .69                   | .20   |
| Total      | 2.09                  | 2.79  |

Cholera accounted for 19,182 deaths in 1924, a death-rate of 2.79 per mille, as against 3,728 deaths in 1923, a death-rate of .54 per mille.

A proposal is at present under consideration to form an "Epidemic section" consisting of a small number of medical men with a subordinate personnel specially trained in water duties and rural conservancy generally. This section with its materials to be under the orders of the Director of Public Health and ready to move instantly to any affected or threatened area of epidemic disease. Such a unit with its personnel and materials will be most useful to combat epidemics, especially cholera. Cholera is endemic throughout the year in Cachar and Sylhet. All other districts reported isolated cases in every month. It only requires a slight relaxation of precautionary measures to light up an epidemic when the nidus is so generally scattered. This shows the necessity of a trained staff fully provided with materials for water purification and the personnel to carry out this as well as general sanitary precautions. Reliance on the local resources is not sufficient as a rule, the latter are fully occupied with the daily duties of their station. They cannot be concentrated immediately and they cannot be expected to be as expert as an epidemic section, specially trained to deal with epidemics.

Kamrup, Cachar, Sylhet and Goalpara districts were badly affected with cholera during the year, Kamrup being the worst sufferer showing mortality of 7.09 per mille. The disease was prevalent in epidemic form in all these districts in the hot weather months from April to July and in the Sylhet and Goalpara districts there was another and more acute outbreak in the months of November and December. The disease was very widespread in Kamrup, both subdivisions being affected. Sub-Assistant Surgeons in charge of dispensaries assisted by a few Supernumerary Sub-Assistant Surgeons and three temporary epidemic doctors especially appointed by the Local Boards to deal with the epidemic rendered medical aid to the sick and took preventive measures as far as practicable. Cholera broke out in virulent form during the months of March, April, May, June and July in Cachar and it continued unabated till the rains set in. Scanty rainfall and paucity of good drinking water increased the incidence of this disease. Cholera injection was pushed as far as possible. While some took it without any objection, most of the people took it after a lot of persuasion. Inoculations played a part in checking the spread and duration of the epidemic. In the Karimganj and Habiganj subdivisions of the Sylhet district cholera prevailed in epidemic form in April, May, June and again in October, November and December while in the remaining three subdivisions it was sporadic in nature. In Kamrup district the epidemic occurred in April, May, June and July. There was no recrudescence in the autumn.

In the Goalpara district the services of the Assistant Surgeon and Sub-Assistant Surgeons on *kala-azar* duty were temporarily utilised to deal with the epidemic. In all these districts Supernumerary Sub-Assistant Surgeons when available were sent by the Inspector-General of Civil Hospitals, Assam, whenever the local staff could not cope with it and the Civil Surgeons asked for additional help.

A severe and widespread epidemic of cholera prevailed in the Valley of the Manipur State. The epidemic commenced in the month of May and continued till early September when it subsided, the total number of cases and deaths reported being 8,699 and 7,327, respectively. Leaflets containing the usual anti-cholera precautions were widely distributed. They were read to pupils in schools in affected villages. Due precautions with regard to protection of water supplies, restriction of movements, etc., were adopted and a temporary segregation hospital and a staff of men for disinfection purposes were provided.

Vital statistics for the Manipur State are not kept up. The above figures therefore are not included in the general Cholera Statistics for the province. The epidemic started as isolated cases in April, introduced from the endemic areas by the lines of communication. On 15th May a general outbreak occurred. Had a trained epidemic Section been available as is now suggested, I am of the opinion, such epidemic would be overcome much earlier.

Bengal is the endemic seat of cholera. Sylhet is in this endemic area. Spread of infection is usually by the routes-river-rail or road from the endemic centres of Bengal up the Brahmaputra Valley.

19. Amongst the towns, Barpeta reported the highest rate of 4.69. The infection was introduced into the town from adjoining rural areas where the disease was prevalent. Other high rates in towns are Doom-Dooma (3.44), Karimganj (2.41), Silchar (2.16), Sylhet (2.07), Hailakandi (1.79), Habiganj (1.52) and Sunamganj (1.23). Only six towns, all in the Assam Valley escaped the disease.

In rural areas the following circles in the Kamrup district reported high rates, Bajali (30.44), Nalbari (12.68), Boko (8.50), and Barpeta (6.23). In Cachar the high rates were in Lakhipur (11.47), Katigora (9.71), Sonai (6.99), Katlichera (5.65) and Uderband (5.55). In Goalpara the high rates were in Guma (9.56), Dudnai (9.03), Sidli (6.51) and Ripu (6.21). In Sylhet the high rates were in Baniachong (7.59), Tahirpur (5.77), Badarpur (5.59), Nabiganj (5.20) and Ajmiriganj (5.16). Thirteen rural circles escaped the visitation of the disease.

20. The ratio of mortality from Cholera in tea estates was 1.48 in 1924, as compared with .61 in the preceding year. The high incidence was in the following order—Cachar (4.61), Kamrup (4.17), Sylhet (2.07) and Goalpara (1.05) and this is in accordance with the intensity of the prevalence of the disease among the general population.

### 21.—SMALL-POX.

| Districts. | Death-rate per mille. |       |
|------------|-----------------------|-------|
|            | 1914-23.              | 1924. |
| 1          | 2                     | 3     |
| Cachar     | .32                   | .02   |
| Sylhet     | .20                   | .03   |
| Goalpara   | .56                   | .20   |
| Kamrup     | 1.11                  | 1.02  |
| Darrang    | .47                   | .84   |
| Nowgong    | .73                   | .36   |
| Sibsagar   | .47                   | .05   |
| Lakhimpur  | .08                   | .02   |
| Total      | .41                   | .24   |

The death-rate from small-pox fell from .47 in the year 1923 and .41 the decennial average to .24 in the year under report. There was a fall in every district except Darrang where there was an outbreak in a localised form in two areas. In Kamrup there is opposition to vaccination among certain sections of the people and all cases of refusals were reported to the Deputy Commissioner with whose assistance some were vaccinated. But for the opposition of the people to accept vaccination, the death-rate in this district would have been reduced to the level of that of other districts. Simple regulations under the Epidemic Diseases Act, 1897 (III of 1897), to make vaccination compulsory in any particular area where an epidemic of small-pox occurs or is imminent are at present under consideration. If and when such regulations are passed they would go a great way to help the district officers to eradicate the disease as they would then be in a position to compel the refractory to submit to vaccination.

22. Gauhati, Nowgong and Tezpur are the only towns which reported deaths from small-pox during the year, Gauhati reporting the highest rate of 1.76. This high rate at Gauhati is unsatisfactory as vaccination is compulsory here, and there is a Health Officer. Amongst rural circles, Tezpur reported the highest rate of 5.44. Gauhati circle (2.86) in Kamrup, and Ripu (2.22) in Goalpara also reported high rates. Fifty-one out of 103 rural circles were free from the disease during the year.

## 23.—FEVERS.

| Districts. | Death-rate per mille. |       |
|------------|-----------------------|-------|
|            | 1914-23.              | 1924. |
| 1          | 2                     | 3     |
| Cachar     | 14.61                 | 13.49 |
| Sylhet     | 16.14                 | 16.88 |
| Goalpara   | 26.26                 | 27.51 |
| Kamrup     | 17.41                 | 17.19 |
| Darrang    | 15.89                 | 17.01 |
| Nowgong    | 16.19                 | 16.66 |
| Sibsagar   | 11.90                 | 10.46 |
| Lakhimpur  | 10.98                 | 10.35 |
| Total      | 16.33                 | 16.52 |

The ratio of mortality from fevers was 16.52, as compared with 15.52 in 1923 and 16.33, the decennial average. The mortality is still above the pre-influenzal decennium ending 1917 for which rate was 14.91. As usual fevers were more prevalent in Goalpara, Kamrup, Darrang, Nowgong and Sylhet districts in which *kala-azar* is endemic. This is significant, undoubtedly some were cases of *kala-azar*.

*Malaria*.—Special anti-malarial measures were continued during the year at Pasigbat, Lumding and Haflong.

The incidence of malaria at Lumding which is a railway junction still shows a steady though slow improvement. The figures are not a true indication of the incidence of malaria in Lumding as they include a large number of cases treated there from amongst the running staff infected elsewhere and also cases which came from other places for treatment.

The total number of cases treated were 2,789 in 1923 and 2,419 in 1924.

A spleen index taken amongst children resident at Lumding Bazar shows a very definite improvement since 1913 :—

| Year. | Children examined. | Splenic Index. |
|-------|--------------------|----------------|
| 1     | 2                  | 3              |
| 1913  | 91                 | 89             |
| 1922  | 104                | 32             |
| 1924  | 213                | 30             |



No new sanitary work of any magnitude was undertaken during the year, but improvement in the way of filling up low places is proceeding gradually. The usual routine use of oil and ordinary anti-malaria measures continues. At Haflong, all possible breeding grounds for mosquitos were sprayed with oil as a larvicidal measure and special attention was paid to drainage. The station was also kept clear of undergrowth. During the year the control of the work was transferred from the Medical Officer of the Assam-Bengal Railway to the Chairman of the Bazar Fund who works under the direction of the Civil Surgeon, Cachar.

At Pasighat, jungle clearing, oil spraying and clearing of the beds of *nallahs* were undertaken. Experiments were made in the use of drip cans, which proved successful. This method was therefore employed at intervals along the Mora-Lalli stream from its source, and though a little more extravagant in the expenditure of oil, proved its efficacy by the almost total absence of larvæ in this stream which, in previous years, was reported to be the principal breeding ground of the *Anopheles* mosquito. The result showed some improvement in malarial incidence. The incidence of infection in the Assam Rifles fell from 16.4 in 1923 to 10.9 in 1924.

The Director of Public Health made investigation in August 1924 as to the causes for the alleged increase of malaria in the Hailakandi subdivision of the Cachar district. The results of his investigations were as follows. The principal factors suggested as causing the alleged increase of malaria in the subdivision are:—

- (a) Certain deforestation operations carried out in 1922 in the subdivision itself and in the neighbourhood of the subdivision. These have had little or no effect in causing the alleged increase.
- (b) Construction of the Katakhal-Lala Railway and the production of borrow pits along the embankment. This branch line of the Assam-Bengal Railway was commenced in 1919 and was completed in 1923. It was seen that the construction has not caused any damming up of any *khals* nor diverted the channels of previously existing *khals* to any appreciable extent.

In order to arrive at dependable figures on which to work and base subsequent conclusions, it was decided to carry out a malarial survey in the subdivision. As the railway line was being accused, it was decided to calculate the Splenic Index of both adults and children of certain selected villages along both sides of the railway in its course and compare these with those obtained from villages situated some considerable distance from the line. The flooding of the country hampered this survey very much.

The result of this survey is as follows and throws very considerable and important light on the subject:—

| Village.               | From Distance Railway.              | Adults examined. | Spleen enlarged. | Splenic Index per cent. | Children examined. | Spleen found. | Splenic Index per cent. | Total Splenic Index per cent. |
|------------------------|-------------------------------------|------------------|------------------|-------------------------|--------------------|---------------|-------------------------|-------------------------------|
| 1                      | 2                                   | 3                | 4                | 5                       | 6                  | 7             | 8                       | 9                             |
| Boalipar ... ..        | $\frac{1}{4}$ to $\frac{1}{2}$ mile | 61               | 7                | 11.47                   | 49                 | 11            | 22.45                   | 16.36                         |
| Hailakandi ... ..      | $1\frac{1}{2}$ „                    | 160              | 14               | 8.75                    | 88                 | 7             | 7.95                    | 8.46                          |
| Nachintapur ... ..     | Ditto                               | 63               | 10               | 15.87                   | 15                 | 4             | 26.66                   | 17.94                         |
| Borbund' ... ..        | Ditto                               | 25               | 5                | 20.00                   | ...                | ...           | ...                     | ...                           |
| Parbakattarbund ... .. | Ditto                               | 54               | 3                | 5.55                    | 21                 | 5             | 23.90                   | 10.66                         |
| Bausdahar ... ..       | $5\frac{1}{2}$ miles                | 70               | 13               | 18.57                   | 89                 | 30            | 33.70                   | 27.04                         |
| Companiganj ... ..     | $2\frac{1}{4}$ „                    | 76               | 16               | 21.05                   | 41                 | 21            | 51.22                   | 31.62                         |

The report proceeds as follows:—

“It will be observed that the Splenic Indices at the villages more remote from the Railway are considerably higher than those of villages much nearer. This is most significant and clearly indicates that the Railway embankment with its borrow pits is not wholly responsible for the alleged increase of Malaria. When the general topographical features of the country with its numerous *khals* and collections of water together with the dense rank vegetation which is to be found everywhere, are taken into consideration, it is easy to understand that the amount of mosquito breeding taking place in the Railway borrow pits is comparatively negligible and cannot very materially affect the malaria incidence. In my opinion the chief breeding grounds of mosquitos, particularly the “Anophele” are the “Baris” in which the people live. These “Baris” are situated within dense bamboo groves, where conditions for the propagation of mosquitos, such as heat, moisture, rank vegetation, numerous collections of stagnant water and the absence of sun light and air, are ideal.

Coupled with the above is the question of insufficient supplies of quinine, which is causing an increase in the incidence of malaria. These insufficient supplies mean that patients are not getting a complete course of quininization and hence frequent relapses. Each time a patient has a relapse he is entered on the books of the dispensary concerned as a fresh case. In this manner, the malaria figures become inflated and are apt to give rise to false impressions. Relapses of malaria have become more frequent during the last few years and are the result of Local Boards being unable to supply quinine in sufficient quantity to their dispensaries for want of funds. Patients are getting smaller and insufficient doses of the drug and until steps are taken to remedy this defect, malaria will increase.”

Dr. C. Strickland, M.A., B.Ch. (Cantab.), of Calcutta School of Tropical Medicines continued his Field Work researches on malaria in the province. The publication of the report will undoubtedly be of value in the anti-malaria campaign.

The result of the mosquito investigation in Shillong made by Colonel T. C. McCombie Young showed that the chief carrier is *A. Maculatus*, that this mosquito breeds in the swampy areas below the seepage line in *nullahs* and in the swamp valleys and that the irrigation channels are not responsible for these mosquitos.

Contour drains have been recommended as a remedy, and Government have sanctioned Rs. 2,277 for this purpose on Government lands. The report mentions that although malaria can be acquired in Shillong the chances of acquiring that disease are so slight as to be negligible and to demand no special personal precaution.

Anti-malarial measures of any extent in Assam are at present prohibited by their cost. A campaign against the particular anopheles mosquito the carrier in the various districts is the only sound method of prevention. In the absence of funds for this purpose, reliance must generally be placed on quinine. This drug should be sold at cheaper rates. An enquiry is now in 1925 being conducted into the possibilities of producing cinchona febrifuge in a large scale in Assam Province. The general distribution at cheap rates of this drug with its valuable alkaloids would materially reduce the death and sickness rate from malaria and the debility caused by that disease.

24. In towns the fever death-rates varied from 22.41 in Nazira to 2.41 in Karimganj. The towns returning the next highest death-rates from this cause were Golaghat (16.69), Maulvibazar (15.89), Goalpara (15.78) and Gauripur (15.08). As regards rural circles, Kalaigaon (36.35), Panerihat (28.61), Mangaldai (24.12), Udalguri (23.34) and Tezpur (21.25) all in Darrang district, Golakganj (36.01), Mankachar (35.76), Bijni Duar (35.34), Dudnai (31.68), Kokrajhar (31.37), Guma (30.96), North Salmara (29.66), Goalpara (29.46), Bilasipara (27.63), Dhubri (26.35), Sidli (25.91) and Lakhipur (23.62) all in Goalpara, Gowainghat (34.15), Jaintiapur (25.03), Sylhet (22.04), Chhatak (21.98) and Habiganj (21.72) all in Sylhet, Lumding (30.80) in Nowgong, Gauhati (26.37) and Rangia (21.66) in Kamrup, Moran (23.05) and Doom-Dooma (21.96) in Lakhimpur reported high rates of mortality from fevers.

25.—*KALA-AZAR.**The number of deaths from Kala-azar.*

| District.                | 1915. | 1916. | 1917. | 1918. | 1919. | 1920. | 1921. | 1922. | 1923. | 1924. |
|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1                        | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    |
| Cachar ... ..            | 2     | ...   | 1     | 4     | 3     | 5     | 1     | ...   | 4     | 2     |
| Sylhet ... ..            | 159   | 63    | 31    | 34    | 7     | 26    | 183   | 275   | 841   | 1,874 |
| Goalpara ... ..          | 55    | 106   | 153   | 313   | 311   | 602   | 557   | 253   | 442   | 309   |
| Kamrup ... ..            | 283   | 277   | 287   | 564   | 423   | 931   | 755   | 450   | 976   | 1,152 |
| Darrang ... ..           | 310   | 320   | 245   | 263   | 171   | 256   | 169   | 202   | 289   | 448   |
| Nowgong ... ..           | 419   | 451   | 591   | 565   | 559   | 846   | 1,172 | 933   | 1,291 | 1,479 |
| Sibsagar ... ..          | 7     | 28    | 181   | 235   | 168   | 114   | 121   | 128   | 219   | 235   |
| Lakhimpur ... ..         | ...   | 3     | 1     | 3     | 5     | ...   | 3     | 4     | 13    | 13    |
| Garo Hills ... ..        | 12    | 6     | 18    | 22    | 20    | 18    | 26    | 47    | 54    | 69    |
| Sadiya Frontier Tract... | ...   | ...   | ...   | ...   | ...   | ...   | ...   | ...   | 2     | 4     |
| Total ... ..             | 1,247 | 1,254 | 1,508 | 2,003 | 1,667 | 2,798 | 2,987 | 2,292 | 4,131 | 5,585 |

*The number of Kala-azar cases treated.*

| District.                | 1920. | 1921.  | 1922.  | 1923.  | 1924.  |
|--------------------------|-------|--------|--------|--------|--------|
| 1                        | 2     | 3      | 4      | 5      | 6      |
| Cachar ... ..            | 75    | 316    | 210    | 332    | 253    |
| Sylhet ... ..            | 158   | 2,837  | 5,148  | 9,278  | 16,516 |
| Goalpara ... ..          | 1,569 | 2,500  | 2,731  | 4,176  | 5,016  |
| Kamrup ... ..            | 2,402 | 3,491  | 2,700  | 4,098  | 5,780  |
| Darrang ... ..           | 378   | 1,360  | 1,229  | 2,416  | 3,286  |
| Nowgong ... ..           | 1,816 | 4,343  | 5,934  | 11,847 | 13,625 |
| Sibsagar ... ..          | 659   | 875    | 1,307  | 2,143  | 2,929  |
| Lakhimpur... ..          | 9     | 22     | 12     | 68     | 81     |
| Garo Hills ... ..        | 43    | 84     | 329    | 589    | 985    |
| Khasi and Jaintia Hills* | 54    | 52     | 59     | 120    | 274    |
| Naga Hills ... ..        | ...   | ...    | ...    | 4      | 3      |
| Manipur ... ..           | ...   | ...    | ...    | ...    | 22     |
| Total ... ..             | 7,188 | 15,880 | 19,659 | 35,071 | 48,770 |

\* *Kala-azar* is not endemic in the Khasi and Jaintia Hills. These figures refer to cases treated in the *Kala-azar* Wards of the Pasteur and Medical Research Institute. They came from the plains. The figures include also the cases treated in the Mathan *Kala-azar* dispensary. Since closed for want of patients.

The main energies of the Public Health Department have been directed to the campaign against *kala-azar*. As mentioned in the last year's report, the close co-operation between Public Health and Medical Departments through the Public Health Board has made this campaign most effective.

Fortunately a remedy is now available by which it might, with confidence, be said the disease can be kept in check if not ultimately eliminated. This is fortunate at this period as recent surveys have shown a widespread distribution of the disease with a marked recrudescence which unchecked would undoubtedly devastate areas, as did the more localised epidemics in the nineties which in the Nowgong area exterminated villages.

The method of transmission of the parasite still remains a secret. Preventive measures at present consists of treatment of cases. Experience has shown that this is effective in effectively checking the disease which points to the fact that the human being is a necessary link in the transmission of the parasite if an insect vector be implicated. If, however, the path of infection be direct transmission from individual to individual the source of the disease is eliminated by the cure of the patient. The researches of the *kala-azar* Commission which is at present at work in the Assam Valley, may throw some light on the mode of transmission. Prevention is better than cure. Until the life history of the *kala-azar* parasite has been discovered a Public Health Department is handicapped in its campaign against the disease.

The number of cases treated during the year was 48,770, as against 35,071 in 1923. This brings the total treated for the 5 years since 1920 inclusive to 126,568. The benefit conferred on the population can be estimated when it is realised that modern treatment has converted a death-rate of 90 per cent. into a recovery rate of the same figures. Taking the figures for Assam, this means that of these 123,568, 113,911 would have undoubtedly died if untreated. The benefit will be still further appreciated when it is realised that each case is a source of infection for its area. The curing of the infected is prevention for the uninfected. The number of deaths from *kala-azar* was 5,585 in 1924, as against 4,131 for 1923.

Of 48,770 cases under treatment 3,605 died. This gives a death-rate of 7.39 per cent. amongst the cases under treatment. These figures are reliable as all cases were diagnosed by medical men.

The figures 5,585 represents the total deaths as recorded in the whole province.

| —                       |     | Deaths reported for the province. | Deaths recorded amongst cases under treatment. |
|-------------------------|-----|-----------------------------------|--|
| 1                       |     | 2                                 | 3  |
| Cachar                  | ... | 2                                 | 38   |
| Sylhet                  | ... | 1,874                             | 1,231  |
| Goalpara                | ... | 309                               | 461  |
| Kamrup                  | ... | 1,152                             | 420  |
| Darrang                 | ... | 448                               | 164  |
| Nowgong                 | ... | 1,479                             | 903  |
| Sibsagar                | ... | 235                               | 247  |
| Lakhimpur               | ... | 13                                | 6  |
| Garohills               | ... | 69                                | 119  |
| Sadiya Frontier Tract   | ... | 4                                 | ...  |
| Khasi and Jaintia Hills | ... | ...                               | 11   |
| Total                   | ... | 5,585                             | 3,605  |

The latter figures are unreliable as diagnosis and record generally for the province depend on statistics furnished by chaukidars and gaonburas, especially as it is found that in some districts the number of deaths recorded by the gaonburas and chaukidars does not even cover the deaths amongst the cases under treatment as is shown in the comparative table in the margin. Action is being taken to attempt to make the vital statistics generally more accurate.

The statistics must be read with discrimination: Owing to a more thorough survey and more scientific diagnosis with the increased staff on *kala-azar* duty many cases which were formerly diagnosed "Fever" are now found to be *kala-azar*. This accounts for the apparently large increase in the *kala-azar* incidence and death-rate. Still notwithstanding this fact the last few years have shown a recrudescence of the disease which fortunately modern treatment is combating. Areas which were formerly carefully surveyed and pronounced lightly infected or free have last year been found infected. The disease is spreading.

Six Assistant Surgeons and 81 Sub-Assistant Surgeons were employed on special *kala-azar* duty during the year. They were posted in the various districts as shown below :—

| —                       |     | Assistant Surgeon. | Sub-Assistant Surgeons. |
|-------------------------|-----|--------------------|-------------------------|
| 1                       |     | 2                  | 3                       |
| Sylhet                  | ... | 1                  | 31                      |
| Garohills               | ... | ...                | 5                       |
| Goalpara                | ... | 1                  | 7                       |
| Kamrup                  | ... | 1                  | 9                       |
| Nowgong                 | ... | 1                  | 14                      |
| Darrang                 | ... | 1                  | 7                       |
| Sibsagar                | ... | 1                  | 7                       |
| Khasi and Jaintia Hills | ... | ...                | 1                       |
| Total                   | ... | 6                  | 81                      |

In addition to the special dispensaries run by Sub-Assistant Surgeons on special *kala-azar* duty, all the other dispensaries in the province are required to treat *kala-azar*. All Sub-Assistant Surgeons whether in charge of special *kala-azar* dispensaries, State or Local Board dispensaries visit and revisit villages within five-miles radius of their dispensaries in search of fresh *kala-azar* cases. The cases detected during such visits are advised to undergo treatment. For areas suspected to be infected with *kala-azar* and not falling within a five-miles radius of any dispensary, special Sub-Assistant Surgeons are placed on survey duty. Suitable arrangements for the treatment of cases brought to light by such surveys are made in all cases. The following areas were specially surveyed during the year.

Seven Sub-Assistant Surgeons were engaged throughout the year to survey the Sibsagar district. No widespread infection was discovered to require the establishment of any more special dispensaries in this district.

In the district of Cachar some of the villages of the Hailakandi subdivision and almost all the villages in the North Cachar Hills are infected. As a result of the resurvey of the Hailakandi subdivision, it has been found that the localities around the Algapur dispensary are comparatively more affected than the other areas in Hailakandi subdivision. It is under consideration whether a special *kala-azar* dispensary for the treatment of *kala-azar* is required here.

Arrangements have been made since the close of the year to survey the Sunamganj subdivision of the Sylhet district which was reported as lightly infected during the cold weather survey of 1922-23.

In the Garo Hills, survey work is not satisfactory owing to the difficulty in procuring Sub-Assistant Surgeons who are natives of the district. Non-Garo Sub-Assistant Surgeons have proved unsatisfactory.

In the Goalpara district some new infected areas were detected and two new dispensaries at Agia and Sapatgram and three out centres at Dewli, Makri and Kachudala were opened to afford medical relief in the affected areas.

In Kamrup, the Dimuria mauza was found to be infected and a special *kala-azar* dispensary is being opened. The survey of the Barpeta subdivision was in progress.

In the Nowgong district, a part of the Mikir Hills and Chapari area were surveyed, but it was not necessary to open any new centres in these areas.

The Sub-Assistant Surgeons in charge of the existing dispensaries in the Lakhimpur district surveyed the villages in their jurisdiction. No widespread infection was discovered and no special action to deal with *kala-azar* was required.

A disturbing factor in the campaign is the number of "stop treatment cases" shown during the year. Out of 48,770 cases treated, 16,733 stopped treatment before the completion of their course. The ratio is about 33 per cent. Notwithstanding this the treatment is most popular, and patients eagerly come for injection.

The course of treatment with Soloids of Sodium Antimony Tartrate last about three months. This is rather long and tedious, and after a month or two months of injections on cessation of the fever and as a result of a general improvement in health, many patients discontinue their course and consider themselves cured. Unfortunately cessation of symptoms and absence of signs do not always indicate eradication of the disease which really requires a much more prolonged course.

Regulations under the Epidemic Diseases Act, III of 1897, published by the Government of Assam compel patients to undergo a complete course of treatment. Compulsion is not always advisable or effective. To stop this unsatisfactory condition, extensive propaganda is about to be initiated in 1925, especially in schools with the aid of the Director of Public Instruction.

Leaflets popularly illustrated and written in conversational style will be read to all school children by their teachers.

The seven Assistant Surgeons on special *kala-azar* duty will deliver lantern lectures. The aim is to explain fully the danger of ceasing treatment before completion. Treatment as carried out in 1924 consists of a three months' course of Sodium Antimony Tartrate. The cost of this drug per patient for a course of cure was annas 3. During the year experiments were carried out at the Pasteur Institute, Shillong, with organic compounds ("Urea Stibamine", "Von Heyden 471," "Urea Glucoside") of Antimony Salt with most encouraging results. With this compound of Antimony, treatment for cure is reduced to four weeks as against 3 months with the simple salt. The latest cost of one of these drugs—Urea Stibamine—is Rs. 10-2-0 for 3 grammes which is sufficient for the cure of one patient.

For 1925 arrangements have been made to treat all "Antimony Fast" cases (*viz.*, cases which do not respond to treatment by the Sodium Salt) throughout the province by Urea Stibamine or other organic compounds in selected hospitals. This will shorten the treatment by a period of two months.

It will also mean a saving of Rs. 18-12-0 per patient treated in hospital diets. The extra cost of the drug in treating with Urea Stibamine as compared with the Sodium Salt is Rs. 9-15-0, a saving of Rs. 8-13-0 is therefore shown per patient treated in diets alone, not to mention Hospital accommodation, staff and clothing. It would be economically sound therefore to treat all in-door patients with Urea Stibamine or some similar compound of Antimony in hospitals where competent Medical Officers are available. The toxic effects of such a potent drug and its cost at present prohibit its general use in out-door work. However as experience is gained in technique I believe the solution of the difficulty experienced by the number of cases who stop treatment will be the general use of the more potent drug which can cure in so much shorter a time. The period of treatment is lessened to a third of the time required by the plain salt and results are more certain.

The working arrangement was the same as in the previous year. The Civil Surgeons being responsible for the *kala-azar* work in their districts spent about 10 days in the month in the inspection of *kala-azar* work. The special Assistant Surgeons spent about 3 weeks in the month on inspection duty. The Subdivisional Medical Officers also inspected the *kala-azar* work in their subdivisions. The Director of Public Health spent the cold weather in the inspection of *kala-azar* work and the Inspector General of Civil Hospitals as the President of the Public Health Board (Epidemics) also inspected *kala-azar* work when on tour.

#### 26.—DYSENTERY AND DIARRHŒA.

| District.        | Death-rate per mille. |       |
|------------------|-----------------------|-------|
|                  | 1914-23.              | 1924. |
| 1                | 2                     | 3     |
| Cachar ... ..    | 2·11                  | 3·12  |
| Sylhet ... ..    | 1·77                  | 1·71  |
| Goalpara ... ..  | ·32                   | ·33   |
| Kamrup ... ..    | ·84                   | ·87   |
| Darrang ... ..   | 2·93                  | 1·82  |
| Nowgong ... ..   | 1·16                  | ·82   |
| Sibsagar ... ..  | 3·34                  | 1·92  |
| Lakhimpur ... .. | 3·66                  | 2·64  |
| Total ... ..     | 1·93                  | 1·62  |

The death-rate from dysentery and diarrhœa was 1·62, as compared with 1·33 in 1923 and 1·93, the decennial average.

The death-rate from the same cause in tea estates was 4·23, as compared with 3·76 in 1923. In Sylhet and Cachar the rates rose from 3·45 and 3·27, respectively, in 1923 to 5·14 and 4·01, respectively, in 1924. In other districts, excluding Kamrup in which reporting is defective, the rates were approximately the same as in the preceding year.

27. *Plague*.—Only one case of bubonic plague was reported from the Manipur State in the year 1924. The patient was a Bengali clerk of the Imperial Tobacco Company who left Calcutta on the 4th August 1924 and reached Imphal on the 12th of the same month. The case was brought to the notice of the Civil Surgeon on the day after, and he was immediately segregated in hospital. The clinical diagnosis of plague was confirmed by the finding of a gram-negative bipolar staining bacillus in the fluid withdrawn by gland puncture. All precautions against the spread of the disease were carried out. No fleas were found on his body or clothing. The articles

that could not be disinfected by heat or formalin vapour were burnt. As the man stopped at Kohima and Dimapur dâk bungalows in the Naga Hills district on his way up, they were disinfected. No dead rats were found either in the house of the patient or in those of his fellow passengers. No further case occurred.

23. *Other causes.*—The total number of deaths reported from “respiratory diseases” and “injuries” including 52 deaths from hydrophobia was 6,708 and 2,037, respectively, as compared with 6,830 and 1,933, in 1923.

The number of deaths registered under the head “all other causes” amounted to 33,196 which yielded a ratio of 4·84 per mille, as compared with 30,172 and 4·40, respectively, in 1923.

*Hookworm disease.*—Hookworm disease is general in Assam as is shown from the returns of Jails and tea gardens where examinations are made.

An extensive campaign against this disease would entail much expense. Although there may not be striking evidence of this disease, nevertheless the anæmia, general debility and poor physique which result from it swells the death-rate and is an economic handicap in the province.

*Leprosy.*—The Medical Department proposes in 1925 to have a special survey of Leprosy in four selected districts as a preliminary move to a general investigation on, and action against this disease.

## SECTION VII.

### VACCINATION.

(Published separately).

## SECTION VIII.

### SANITARY WORKS—MILITARY.

(No remarks.)

## SECTION IX.

### SANITARY WORKS—CIVIL.

29. The number of municipalities and small towns remained the same as in the previous year, *viz.*, 16 and 9, respectively.

General.

30. The total income of these municipalities and small towns, including the opening balance amounted to Rs. 10,41,891 in 1924, as compared with Rs. 10,45,544 in the preceding year. The total expenditure on sanitation was Rs. 4,12,051 which represents 39·54 per cent. of the total receipts, the corresponding figures of the preceding year being Rs. 4,06,595 and 38·88 per cent., respectively. The percentage of expenditure to total receipts of these local bodies individually on public health was in the following order :—

Municipal expenditure on sanitation.

|                                 |     |     |     |     |       |
|---------------------------------|-----|-----|-----|-----|-------|
| (1) Tezpur Municipality         | ... | ... | ... | ... | 53·38 |
| (2) Jorhat                      | ..  | ..  | ..  | ..  | 52·71 |
| (3) Habiganj                    | ..  | ..  | ..  | ..  | 52·33 |
| (4) Silchar                     | ..  | ..  | ..  | ..  | 52·09 |
| (5) Karimganj                   | ..  | ..  | ..  | ..  | 50·05 |
| (6) Gauhati                     | ..  | ..  | ..  | ..  | 47·75 |
| (7) Dibrugarh                   | ..  | ..  | ..  | ..  | 44·29 |
| (8) Sylhet                      | ..  | ..  | ..  | ..  | 44·27 |
| (9) Shillong                    | ..  | ..  | ..  | ..  | 42·13 |
| (10) Goalpara                   | ..  | ..  | ..  | ..  | 39·18 |
| (11) Dhubri                     | ..  | ..  | ..  | ..  | 36·01 |
| (12) Tinsukia                   | ..  | ..  | ..  | ..  | 35·76 |
| (13) Sunamganj                  | ..  | ..  | ..  | ..  | 30·63 |
| (14) Maulavi Bazar small town   | ..  | ..  | ..  | ..  | 30·06 |
| (15) Gauripur small town        | ..  | ..  | ..  | ..  | 28·28 |
| (16) North Lakhimpur small town | ..  | ..  | ..  | ..  | 28·21 |
| (17) Palasbari                  | ..  | ..  | ..  | ..  | 26·27 |
| (18) Doom-Dooma small town      | ..  | ..  | ..  | ..  | 25·24 |
| (19) Golaghat Municipality      | ..  | ..  | ..  | ..  | 22·28 |
| (20) Nowgong                    | ..  | ..  | ..  | ..  | 20·58 |
| (21) Sibsagar                   | ..  | ..  | ..  | ..  | 19·59 |
| (22) Hailakandi small town      | ..  | ..  | ..  | ..  | 19·42 |
| (23) Barpeta Municipality       | ..  | ..  | ..  | ..  | 19·30 |
| (24) Matgaldai small town       | ..  | ..  | ..  | ..  | 9·27  |
| (25) Nazira small town          | ..  | ..  | ..  | ..  | 6·41  |

Both Habiganj and Karimganj Municipalities spent in 1924 twice the amount they usually spend on conservancy.

The following statement shows the expenditure for public health purposes during the year 1924, as compared with that in 1923:—

| Heads of expenditure.   | Total expenditure. |          | Difference. |           |
|---|--------------------|----------|-------------|-----------|
|   | 1924.              | 1923.    | Increase.   | Decrease. |
| 1   | 2                  | 3        | 4           | 5         |
|   | Rs.                | Rs.      | Rs.         | Rs.       |
| 1. Conservancy including establishment, road watering, latrines, etc. | 2,40,509           | 2,35,076 | 5,433       | ...       |
| 2. Drainage ... ..  | 19,250             | 19,494   | ...         | 244       |
| 3. Water-supply ... ..  | 1,22,004           | 1,24,080 | ...         | 2,076     |
| 4. Disposal of the dead ... ..  | 554                | 2,013    | ...         | 1,459     |
| 5. Markets and slaughter-houses ... ..                                | 13,942             | 11,132   | 2,810       | ...       |
| 6. Vaccination ... ..   | 4,075              | 3,323    | 752         | ...       |
| 7. Other sanitary works ... ..  | 11,717             | 11,477   | 240         | ...       |
| Total ... ..  | 4,12,051           | 4,06,595 | 9,235       | 3,779     |
| 8. Construction and maintenance of roads ... ..                       | 1,47,786           | 1,31,060 | 16,726      | ...       |
| Total including roads ... ..  | 5,59,837           | 5,37,615 | 25,961      | 3,779     |

31. *Surma Valley Division.*—No important sanitary work was executed in any of the Municipal towns in this division during the year. The waters of Sylhet and Silchar water-works were chlorinated after filtration during the year. The results of the bacteriological analysis of these waters were very good and justified the small expenditure of chlorination after filtration. Messrs. Worthington Simpson, Limited, inspected the machinery of these water-works and their suggestions for removing the defects noted were carried out. The officers of the Public Health Department made sanitary inspection of the Municipalities in this division and defects as regards conservancy, water-supply, drainage and food supply were brought to notice for rectification. In the Silchar Municipality some drains were improved.

*Assam Valley Division.*—No sanitary works of importance were carried out in this division. The water-works at Dhubri, Gauhati, Tezpur and Jorhat Municipalities which were inspected by Messrs. Worthington Simpson, Limited, were in order and their waters were periodically analysed bacteriologically in the Public Health Laboratory as usual. They generally gave good results. In Goalpara Municipality jungles were cleared, in Barpeta a municipal market was improved at a cost of Rs. 400 and a night-soil cart was purchased for Rs. 174, in Polasbari sheds were erected for bullocks and sweepers for Rs. 424, in Gauhati one of its markets was reconstructed at a cost of Rs. 1,000 and night-soil depôts were constructed for Rs. 430, in Tezpur a new oil engine for water-works was purchased for Rs. 5,050, in Jorhat bullocks for night-soil and rubbish carts for Rs. 545, dust bins for Rs. 171, night-soil receptacles for Rs. 50 and a watering cart for Rs. 260 were purchased, in Sibsagar one night-soil cart and 6 dust bins were purchased and in Golaghat water-supply tanks were constructed and repaired for Rs. 1,644.

All the principal Municipalities in the province are now provided with pipe water-supply except Dibrugarh which has allotted a sum of money for experimental tube well boring. A piped supply here is badly needed. The wells at present in use are badly situated, designed and protected. Samples from the piped water-supply of all Municipalities are analysed bacteriologically at the Public Health Laboratory at Shillong every six weeks. The analysis usually shows a fair to good sample of water. These samples are carefully transported in ice by a special man trained in water sample taking.

*Hill Districts.*—The scheme for the augmentation of the Shillong water-supply by impounding the Wah Jallynoh spring will be completed in 1925, a sum of Rs. 25,027



having been expended on this work in 1924. In this Municipality some additional *pucca* drains were constructed and its segregation camp was provided with water-supply.

A total expenditure of Rs. 7,744 has been incurred by the Public Works Department in 1924 on maintenance of water-supply and drainage and on town improvement as compared with Rs. 36,657 in 1923.

## SECTION X.

## GENERAL REMARKS.

32. *Village sanitation*.—A total expenditure of Rs. 86,397 was incurred by the 19 Local Boards of the Province mainly towards the improvement of water supplies, as compared with Rs. 1,07,243 in the preceding year. The expenditure on original works, *viz.*, construction of new tanks and wells, was as follows:—

Dhubri Local Board Rs. 10,804, Tezpur Rs. 6,622, Mangaldai Rs. 6,147, Silchar Rs. 3,910, Dibrugarh Rs. 3,798, Gauhati Rs. 3,743, Nowgong Rs. 3,266, Golaghat Rs. 2,431, Goalpara Rs. 1,719, Sibsagar Rs. 1,567, Barpeta Rs. 1,113 and 5 Local Boards in Sylhet Rs. 10,402.

The necessity for adequately protecting rural water-supplies in a province where cholera is endemic throughout the year does not receive the attention it deserves. Much might be done in protecting wells and fencing, and preventing surface water contamination of tanks.

33. A total of 4,316 parcels of quinine were sold during the year mainly through the agency of postmasters, as compared with 4,589 in 1923. The following table shows the sales by districts:—

Sale of quinine.

| Districts.                     | Treatment parcels sold in |       | Difference. |           |
|--------------------------------|---------------------------|-------|-------------|-----------|
|                                | 1924.                     | 1923. | Increase.   | Decrease. |
| 1                              | 2                         | 3     | 4           | 5         |
| Cachar ... ..                  | 262                       | 286   | .....       | 24        |
| Sylhet ... ..                  | 1,445                     | 1,520 | .....       | 75        |
| Goalpara ... ..                | 537                       | 573   | .....       | 36        |
| Kamrup ... ..                  | 560                       | 591   | .....       | 31        |
| Darrang ... ..                 | 318                       | 387   | .....       | 69        |
| Nowgong ... ..                 | 271                       | 308   | .....       | 37        |
| Sibsagar ... ..                | 175                       | 181   | .....       | 6         |
| Lakhimpur ... ..               | 134                       | 130   | 4           | .....     |
| Khasi and Jaintia Hills ... .. | 216                       | 210   | 6           | .....     |
| Naga Hills ... ..              | 71                        | 55    | 16          | .....     |
| Lushai Hills ... ..            | 199                       | 268   | .....       | 69        |
| Garro Hills ... ..             | 23                        | 16    | 13          | .....     |
| Manipur State ... ..           | 97                        | 63    | 34          | .....     |
| Sadiya Frontier Tract ... ..   | 3                         | 1     | 2           | .....     |
| Total ... ..                   | 4,316                     | 4,589 | .....       | 273       |

The sales in the year 1924 were approximately the same as those in the preceding year. A proposal for reducing the sale price of quinine has been submitted to Government.

34. The only fair of any importance which is held in this province is the Sidheswari Mela in the Cachar district, where 8,000 people assembled. There were 9 cases of cholera, of which two proved fatal. Precautions were taken beforehand against a possible outbreak of cholera. A temporary hospital in charge of a Sub-Assistant Surgeon was maintained for the reception and treatment of cholera cases. Trench latrines with plenty of lime and phenyle and sweepers to attend to them were provided. It was difficult to prevent infection as the people drank water from the infected river.

35. There was only one coolie camp on the Assam-Bengal Railway in Assam, *viz.*, on the Sibsagar-Khowang construction in the Sibsagar district. Five thousand two hundred and fifty-nine coolies were employed among whom there were no epidemics. Coolies were well housed in temporary lines and trench latrines and water-supply from a tank and tube wells were provided. Two qualified Medical Officers of the Sub-Assistant Surgeon class were in charge of the Medical and Sanitary arrangements of the camp.

36. A synopsis of the work done in the Provincial Public Health Laboratory, Shillong, during the year 1924 is given below :—

Three hundred and fifty-nine specimens of food were examined during the year, of which 133 were found more or less adulterated. Only one out of 18 samples of mustard oil was found to contain hydrocyanic acid. This is certainly an improvement as it appears that importers now take greater care in the selection of the oil which they import into the province. In previous years many samples of oils were condemned and dealers had to pay fines and to destroy their goods. As usual bacteriological analysis of water from various water-works in the province were performed every six weeks. The Sylhet and Silchar waters were in 1924 chlorinated after filtration. The results obtained showed a great improvement in the quality of the water and amply justified the small expense involved. Lactose Fermentors were rarely found in 20 c. c. of water samples taken. In Gauhati only slow filtration is adopted. The results from this municipality were not so good, the filter beds require more attention. All samples for bacteriological analysis are collected and transported in an ice box by a specially trained man.

Chemical analyses of tank and well water-supplies are periodically made :—

|  | 1924. | 1923. |
|--|-------|-------|
| Chemical analysis of water                   | 109   | 91    |
| Chemical examination of <i>ghee</i>          | 19    | 4     |
| Ditto of milk                                | 314   | 309   |
| Ditto of mustard oil                         | 18    | 63    |
| Ditto of other food-stuff                    | 8     | 1     |
| Bacteriological examination of water         | 265   | 239   |
| Bacteriological examination of vaccine lymph | 172   | 206   |
| Examination of mosquitos                     | ...   | 943   |
| Miscellaneous                                | 9     | 46    |
| Silt experiment                              | 131   | ...   |
| Total  | 1,045 | 1,902 |

Assistant Surgeon Ram Taran Sen, D.P.H., who held permanent charge of the Laboratory proceeded on leave on 1st November 1923 to obtain the Diploma of Public Health. He returned on 13th November 1924 and held charge from that date. Temporary Assistant Surgeon Sarat Sasi Kundu held charge of the Laboratory from the beginning of the year to the 12th November 1924.

37. The number of immigrants to Assam during the year was 42,744, as compared with 29,477 in 1923. They used different routes as follows :—

|  |        |
|--|--------|
| <i>Via</i> Goalundo by steamer to Assam Valley   | 2,055  |
| <i>Via</i> Chandpur by rail to Assam Valley      | 7,823  |
| <i>Via</i> Chandpur by rail to Cachar and Sylhet | 8,857  |
| <i>Via</i> Naihati and Amingaon                  | 24,009 |
| Total  | 42,744 |

The steamer route is not now being used to the same extent as previously. A large number for the gardens in Upper Assam are now being sent either *via* Amingaon or

Chandpur. During the year 648 emigrants were received by the Embarkation Agent at Goalundo for repatriation to their native districts as follows :—

|                                 |     |     |     |     |     |
|---------------------------------|-----|-----|-----|-----|-----|
| For Manbhum (Bihar and Orissa)  | ... | ... | ... | ... | 1   |
| For Gurgam (Punjab)             | ... | ... | ... | ... | 6   |
| For Madras Presidency Districts | ... | ... | ... | ... | 641 |

The Travelling Inspector of Emigrants inspected the sanitary arrangements on steamers, railways and at debarkation depôts as usual.

There was an exodus of coolies numbering approximately 1,900 to 2,000 from Meleng, Lakhwa and other tea estates. They marched onwards through Jorhat along the Trunk Road towards Gauhati. Every precaution was taken to house them while in the town and sanitary arrangements were adopted for the supply of water and disposal of excreta, etc. Sub-Assistant Surgeons with medicines and medical comforts accompanied them up to the boundary of the district, Sub-Assistant Surgeons from the next district relieving them.

No epidemic occurred among the emigrants on the journey during the year. Ten cases of cholera in all occurred at various times, of these seven were within the province and three outside the province.

All were detected, isolated and treated at the emigration hospitals by the Emigration Medical staff before the disease spreads. No death occurred among the immigrants during transit, a few cases of ordinary illness were treated in the emigration hospitals, and four deaths occurred in the hospitals. The immigrants were provided with good food, and pure water-supply during their journey. The sanitation by steamers and rail is under constant supervision and the absence of any epidemic or serious illness among a population drawn from various quarters of India, speaks well for the arrangements made.

38. Major T. D. Murison, I.M.S., held charge of the department throughout the year. In January he inspected the *kala-azar* work and vaccination in the districts of Nowgong and Sibsagar. In February he inspected *kala-azar* and vaccination in the Sylhet district and also inspected the Habiganj Municipality. In July, he inspected the Dhubri, Dibrugarh, Tezpur and Gauhati Municipalities. In August he attended a meeting of a Committee appointed to enquire into the alleged increase of prevalence of malaria in the Hailakandi subdivision and also attended another Committee meeting for the purpose of investigating the necessity for a certain "bund" in the same subdivision and also inspected Silchar Municipality and Hailakandi town. In October, he visited Dibrugarh in connection with the *kala-azar* work and inspected Doom-Dooma town. In November he inspected *kala-azar* and vaccination in the Kamrup district. In December he inspected *kala-azar* and vaccination in the Goalpara and Nowgong districts and inspected Goalpara and Nowgong Municipalities. The post of the Assistant Director of Public Health was filled up with effect from the 15th August 1924 and since his appointment, the Assistant Director of Public Health is posted to the Sylhet district to assist the Civil Surgeon mainly in conducting the *kala-azar* campaign in the district.

J. B. HANAFIN, Major, I.M.S.,

SHILLONG :

Offg. Director of Public Health, Assam.

The 12th May 1925.

## SECTION VI.

### ANNUAL REPORT OF THE PUBLIC HEALTH BOARD FOR THE YEAR 1924.

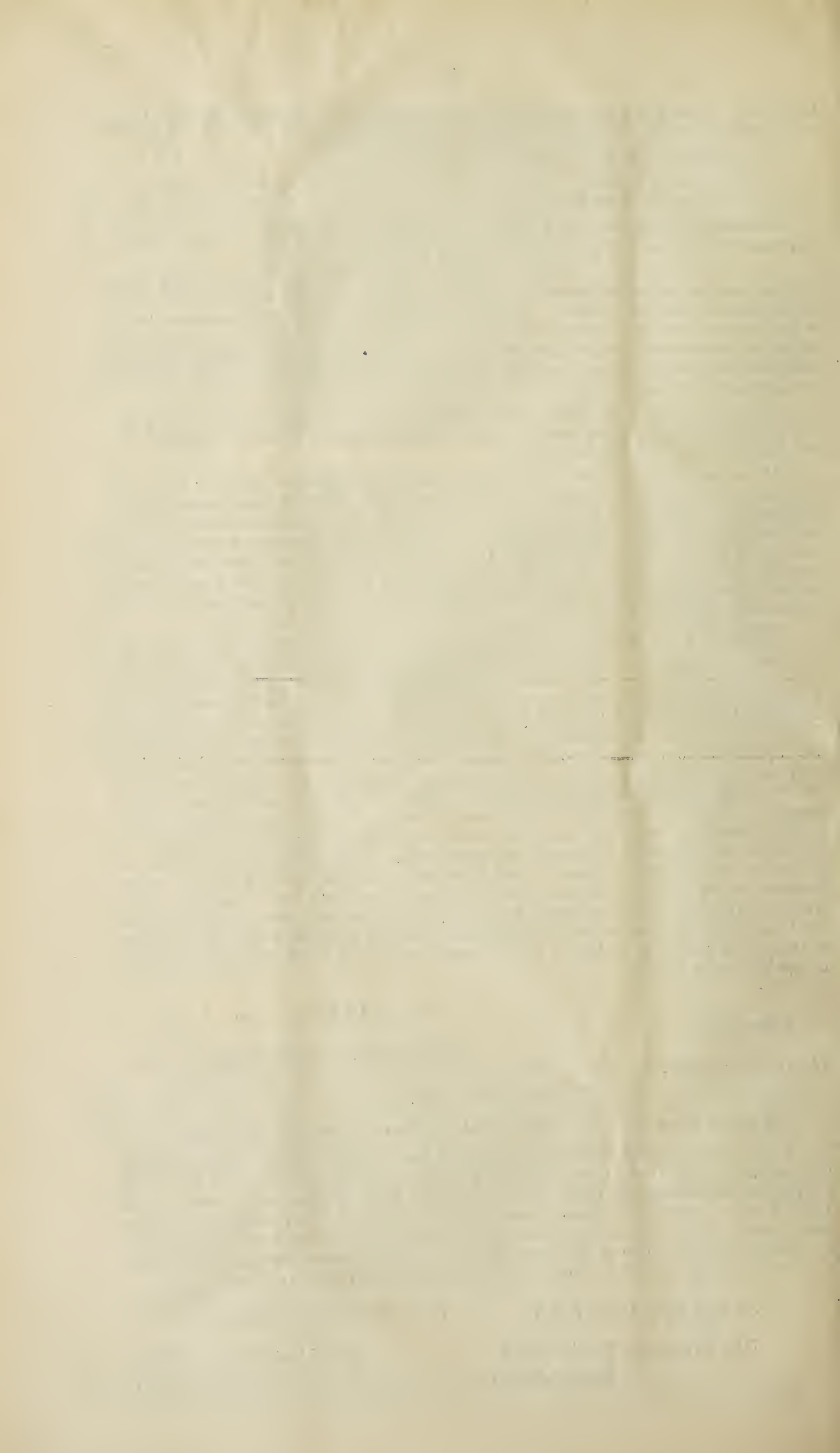
39. The constitution of the Board remained the same as before. There was only one meeting of the Board to consider the project for the augmentation of the water-supply of the Shillong Municipality. The Health Board (Epidemics) referred to in the last report performed the same functions as in the year 1923 when it was first constituted. There was constant discussion of matters and problems of Public Health as affecting the province and the co-ordination of effort between the Public Health and Medical Departments to control epidemics especially *kala-azar*.

J. B. HANAFIN, Major I.M.S.,

C. H. BENSLEY, Colonel I.M.S.,

Offg. Secretary, Public Health  
Board, Assam.

President, Public Health  
Board, Assam.



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**STATEMENTS.**

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## IMPERIAL STATEMENT No. I.—Statement showing the birth

| No.                  | Districts.             |     |     | Population according to the Census of 1921. |           |           | Number of births registered. |         |         |
|----------------------|------------------------|-----|-----|---|-----------|-----------|------------------------------|---------|---------|
|                      |                        |     |     | Male.                                       | Female.   | Total.    | Male.                        | Female. | Total.  |
| 1                    | 2                      |     |     | 3   | 4         | 5         | 6                            | 7       | 8       |
| <b>SURMA VALLEY.</b> |                        |     |     |   |           |           |                              |         |         |
| 1                    | Cachar                 | ... | ... | 261,594                                     | 238,890   | 500,484   | 9,079                        | 8,701   | 17,780  |
| 2                    | Sylhet                 | ... | ... | 1,308,734                                   | 1,232,607 | 2,541,341 | 41,188                       | 38,131  | 79,319  |
|                      | Total                  | ... | ... | 1,570,328                                   | 1,471,497 | 3,041,825 | 50,267                       | 46,832  | 97,079  |
| <b>ASSAM VALLEY.</b> |                        |     |     |   |           |           |                              |         |         |
| 3                    | Goalpara               | ... | ... | 406,628                                     | 355,895   | 762,523   | 15,565                       | 14,377  | 29,942  |
| 4                    | Kamrup                 | ... | ... | 397,267                                     | 365,404   | 762,671   | 11,324                       | 10,505  | 21,829  |
| 5                    | Darrang                | ... | ... | 252,849                                     | 224,593   | 477,442   | 7,253                        | 6,816   | 14,069  |
| 6                    | Nowgong                | ... | ... | 208,731                                     | 189,276   | 398,007   | 5,641                        | 5,103   | 10,744  |
| 7                    | Sibsagar               | ... | ... | 433,913                                     | 389,284   | 823,197   | 11,928                       | 11,383  | 23,311  |
| 8                    | Lakhimpur              | ... | ... | 312,843                                     | 273,734   | 586,577   | 8,129                        | 7,632   | 15,761  |
|                      | Total                  | ... | ... | 2,012,231                                   | 1,798,186 | 3,810,417 | 59,840                       | 55,816  | 115,656 |
|                      | Total for the Province | ... | ... | 3,582,559                                   | 3,269,683 | 6,852,242 | 110,107                      | 102,648 | 212,755 |

## IMPERIAL STATEMENT No. II.—Statement showing the births and deaths

| No.                  | Districts.             | Area, in square miles. | Average population per square mile. | Population (Census of 1921). |         |           | Births.       |                                 | Number of deaths registered. |         |        |        |         |
|----------------------|------------------------|------------------------|-------------------------------------|------------------------------|---------|-----------|---------------|---------------------------------|------------------------------|---------|--------|--------|---------|
|                      |                        |                        |                                     | Male.                        | Female. | Total.    | Total number. | Births per 1,000 of population. | Male.                        | Female. | Total. |        |         |
| 1                    | 2                      | 3                      | 4                                   | 5                            | 6       | 7         | 8             | 9                               | 10                           | 11      | 12     |        |         |
| <b>SURMA VALLEY.</b> |                        |                        |                                     |                              |         |           |               |                                 |                              |         |        |        |         |
| 1                    | Cachar                 | ...                    | ...                                 | 1,859                        | 269     | 261,594   | 238,890       | 500,484                         | 17,780                       | 35.52   | 8,080  | 7,820  | 15,900  |
| 2                    | Sylhet                 | ...                    | ...                                 | 5,388                        | 472     | 1,308,734 | 1,232,607     | 2,541,341                       | 79,319                       | 31.21   | 40,330 | 35,336 | 75,666  |
|                      | Total                  | ...                    | ...                                 | 7,247                        | 419     | 1,570,328 | 1,471,497     | 3,041,825                       | 97,099                       | 31.92   | 48,410 | 43,156 | 91,566  |
| <b>ASSAM VALLEY.</b> |                        |                        |                                     |                              |         |           |               |                                 |                              |         |        |        |         |
| 3                    | Goalpara               | ...                    | ...                                 | 3,954                        | 193     | 406,628   | 355,895       | 762,523                         | 29,942                       | 39.26   | 13,489 | 11,034 | 24,523  |
| 4                    | Kamrup                 | ...                    | ...                                 | 3,863                        | 197     | 397,267   | 365,404       | 762,671                         | 21,829                       | 28.62   | 11,720 | 10,909 | 22,629  |
| 5                    | Darrang                | ...                    | ...                                 | 2,916                        | 164     | 252,849   | 224,593       | 477,442                         | 14,069                       | 29.47   | 6,587  | 6,132  | 12,719  |
| 6                    | Nowgong                | ...                    | ...                                 | 3,699                        | 108     | 208,731   | 189,276       | 398,007                         | 10,744                       | 26.99   | 4,562  | 3,961  | 8,523   |
| 7                    | Sibsagar               | ...                    | ...                                 | 5,097                        | 162     | 433,913   | 389,284       | 823,197                         | 23,311                       | 28.31   | 7,713  | 7,094  | 14,807  |
| 8                    | Lakhimpur              | ...                    | ...                                 | 3,910                        | 143     | 312,843   | 273,734       | 586,577                         | 15,761                       | 26.87   | 6,607  | 5,753  | 12,360  |
|                      | Total                  | ...                    | ...                                 | 23,439                       | 162     | 2,012,231 | 1,798,186     | 3,810,417                       | 115,656                      | 30.35   | 50,678 | 44,883 | 95,561  |
|                      | Total for the Province | ...                    | ...                                 | 30,686                       | 223     | 3,582,559 | 3,269,683     | 6,852,242                       | 212,755                      | 31.04   | 99,088 | 88,039 | 187,127 |

registered in the districts of Assam during the year 1924.

| Ratio of births per 1,000 of population. |         |        | Number of males born to every 100 females born. | Excess of births over deaths per 1,000 of population. | Excess of death over births per 1,000 of population. | Mean ratio of births per 1,000 during previous five years. |         |        |
|--|---------|--------|---|---|--|--|---------|--------|
| Male.                                    | Female. | Total. |   |   |  | Male.  | Female. | Total. |
| 9  | 10      | 11     | 12  | 13  | 14   | 15   | 16      | 17     |
| 19.14                                    | 17.38   | 35.52  | 104   | 3.75  | ...  | 15.72  | 14.91   | 30.64  |
| 16.20                                    | 15.00   | 31.21  | 108   | 1.44  | ...  | 14.99  | 13.95   | 28.95  |
| 16.2                                     | 15.39   | 31.92  | 107   | 1.82  | ...  | 15.11  | 14.11   | 29.22  |
| 20.41                                    | 18.85   | 39.26  | 108   | 7.10  | ...  | 16.74  | 15.84   | 32.58  |
| 14.84                                    | 13.77   | 28.62  | 107   | ...   | 1.05   | 14.82  | 13.54   | 28.37  |
| 15.19                                    | 14.27   | 29.47  | 106   | 2.83  | ...  | 14.59  | 14.06   | 28.66  |
| 14.17                                    | 12.82   | 26.99  | 111   | 5.58  | ...  | 12.73  | 11.97   | 24.70  |
| 14.49                                    | 13.82   | 28.31  | 104   | 10.33   | ...  | 13.08  | 12.13   | 25.22  |
| 13.85                                    | 13.01   | 26.87  | 106   | 5.80  | ...  | 12.63  | 12.18   | 24.81  |
| 15.70                                    | 14.64   | 30.35  | 107   | 5.28  | ...  | 14.24  | 13.39   | 27.63  |
| 16.06                                    | 14.98   | 31.04  | 107   | 3.74  | ...  | 14.63  | 13.71   | 28.34  |

registered in the districts of Assam during the year 1924.

| Number of deaths of males to every 100 deaths of females. | Deaths per 1,000 of population from— |            |         |        |                          |                       |           |                   |             |         |        | Mean ratio of deaths per 1,000 during the previous five years |         |        |
|---|--------------------------------------|------------|---------|--------|--------------------------|-----------------------|-----------|-------------------|-------------|---------|--------|---|---------|--------|
|   | Cholera.                             | Small-pox. | Plague. | Fever. | Dysentery and Diarrhoea. | Respiratory diseases. | Injuries. | All other causes. | All causes. |         |        | Male.   | Female. | Total. |
|   |                                      |            |         |        |                          |                       |           |                   | Male.       | Female. | Total. |   |         |        |
| 13  | 14                                   | 15         | 16      | 17     | 18                       | 19                    | 20        | 21                | 22          | 23      | 24     | 25  | 26      | 27     |
| 103   | 5.74                                 | .02        | ...     | 13.49  | 3.12                     | 1.99                  | .32       | 7.07              | 30.89       | 32.73   | 31.77  | 31.01   | 31.88   | 31.43  |
| 114   | 3.20                                 | .03        | ...     | 16.88  | 1.71                     | .71                   | .29       | 6.93              | 30.81       | 28.66   | 29.77  | 33.09   | 30.39   | 31.77  |
| 112   | 3.62                                 | .03        | ...     | 16.32  | 1.94                     | .92                   | .30       | 6.95              | 30.82       | 29.32   | 30.10  | 32.74   | 30.63   | 31.72  |
| 122   | 2.75                                 | .20        | ...     | 27.51  | .33                      | .17                   | .37       | .82               | 33.17       | 31.00   | 32.16  | 32.40   | 29.17   | 30.89  |
| 107   | 7.09                                 | 1.02       | ...     | 17.19  | .87                      | .44                   | .29       | 2.74              | 29.50       | 29.85   | 29.67  | 25.83   | 24.22   | 25.06  |
| 107   | .55                                  | .84        | ...     | 17.01  | 1.82                     | 1.47                  | .36       | 4.57              | 26.05       | 27.20   | 26.64  | 30.93   | 32.95   | 31.86  |
| 115   | .29                                  | .36        | ...     | 16.66  | .82                      | .32                   | .23       | 2.73              | 21.85       | 20.92   | 21.41  | 26.43   | 25.79   | 26.13  |
| 108   | .29                                  | .05        | ...     | 10.46  | 1.92                     | 1.35                  | .20       | 3.76              | 17.77       | 18.22   | 17.98  | 24.41   | 25.43   | 24.90  |
| 115   | .20                                  | .02        | ...     | 10.35  | 2.64                     | 2.40                  | .29       | 5.04              | 21.12       | 21.01   | 21.07  | 26.67   | 27.23   | 26.93  |
| 112   | 2.14                                 | .40        | ...     | 16.67  | 1.37                     | 1.02                  | .21       | 3.16              | 25.18       | 24.96   | 25.07  | 27.68   | 27.18   | 27.44  |
| 112   | 2.79                                 | .24        | ...     | 16.52  | 1.62                     | .98                   | .29       | 4.84              | 27.65       | 26.92   | 27.30  | 29.90   | 28.73   | 29.34  |

## IMPERIAL STATEMENT No. III.—Deaths registered in the

| No.                  | Districts,                           | January.      | February.     | March.        | April.        | May.          |
|----------------------|--------------------------------------|---------------|---------------|---------------|---------------|---------------|
| 1                    | 2                                    | 3             | 4             | 5             | 6             | 7             |
| <b>SURMA VALLEY.</b> |                                      |               |               |               |               |               |
| 1                    | Cachar ... ..                        | 1,223         | 924           | 1,257         | 2,058         | 2,190         |
| 2                    | Sylhet ... ..                        | 6,576         | 5,604         | 5,131         | 5,737         | 5,874         |
|                      | <b>Total</b> ... ..                  | <b>7,799</b>  | <b>6,528</b>  | <b>6,388</b>  | <b>7,795</b>  | <b>8,064</b>  |
| <b>ASSAM VALLEY.</b> |                                      |               |               |               |               |               |
| 3                    | Goalpara ... ..                      | 1,769         | 1,433         | 1,525         | 1,716         | 1,841         |
| 4                    | Kamrup ... ..                        | 1,181         | 934           | 1,389         | 2,407         | 2,795         |
| 5                    | Darrang ... ..                       | 853           | 687           | 1,039         | 1,100         | 1,039         |
| 6                    | Nowgong ... ..                       | 593           | 561           | 704           | 764           | 824           |
| 7                    | Sibsagar ... ..                      | 959           | 765           | 963           | 1,260         | 1,217         |
| 8                    | Lakhimpur ... ..                     | 902           | 812           | 792           | 795           | 923           |
|                      | <b>Total</b> ... ..                  | <b>6,257</b>  | <b>5,192</b>  | <b>6,412</b>  | <b>7,982</b>  | <b>8,639</b>  |
|                      | <b>Total for the Province</b> ... .. | <b>14,056</b> | <b>11,720</b> | <b>12,800</b> | <b>15,777</b> | <b>16,703</b> |
|                      | <b>Ratio per 1,000</b> ... ..        | <b>2.05</b>   | <b>1.71</b>   | <b>1.86</b>   | <b>2.30</b>   | <b>2.43</b>   |

## IMPERIAL STATEMENT No. IV.—Deaths registered according to

| No.                  | Districts.                                    | Under 1 year.          |              |               |  |              |               |  |              |              |                                   |                                      | 1 and under 5. |               |               |
|----------------------|---|------------------------|--------------|---------------|--|--------------|---------------|--|--------------|--------------|-----------------------------------|--------------------------------------|----------------|---------------|---------------|
|                      |   | Not exceeding 1 month. |              |               | Over 1 month and not exceeding 6 months. |              |               | Over 6 months and not exceeding 12 months. |              |              | Total of male columns 3, 6 and 9. | Total of female columns 4, 7 and 10. | Total.         | Male.         | Female.       |
|                      |   | Male.                  | Female.      | Total.        | Male.                                    | Female.      | Total.        | Male.                                      | Female.      | Total.       |                                   |                                      |                |               |               |
| 1                    | 2   | 3                      | 4            | 5             | 6  | 7            | 8             | 9  | 10           | 11           | 12                                | 13                                   | 14             | 15            | 16            |
| <b>SURMA VALLEY.</b> |   |                        |              |               |  |              |               |  |              |              |                                   |                                      |                |               |               |
| 1                    | Cachar ... ..                                 | 956                    | 772          | 1,728         | 613                                      | 613          | 1,226         | 286  | 273          | 559          | 1,855                             | 1,658                                | 3,513          | 1,174         | 1,099         |
| 2                    | Sylhet ... ..                                 | 5,441                  | 3,676        | 9,117         | 2,058                                    | 1,659        | 3,717         | 991  | 998          | 1,989        | 8,490                             | 6,333                                | 14,823         | 4,955         | 4,426         |
|                      | <b>Total</b> ... ..                           | <b>6,397</b>           | <b>4,448</b> | <b>10,845</b> | <b>2,671</b>                             | <b>2,272</b> | <b>4,943</b>  | <b>1,277</b>                               | <b>1,271</b> | <b>2,548</b> | <b>10,345</b>                     | <b>7,991</b>                         | <b>18,336</b>  | <b>6,129</b>  | <b>5,525</b>  |
| <b>ASSAM VALLEY.</b> |   |                        |              |               |  |              |               |  |              |              |                                   |                                      |                |               |               |
| 3                    | Goalpara ... ..                               | 1,953                  | 1,361        | 3,314         | 1,255                                    | 1,118        | 2,373         | 411  | 367          | 778          | 3,619                             | 2,846                                | 6,465          | 1,678         | 1,544         |
| 4                    | Kamrup ... ..                                 | 1,186                  | 1,026        | 2,212         | 695                                      | 668          | 1,363         | 427  | 450          | 907          | 2,308                             | 2,174                                | 4,482          | 1,945         | 2,001         |
| 5                    | Darrang ... ..                                | 551                    | 520          | 1,071         | 604                                      | 487          | 1,091         | 275  | 301          | 576          | 1,430                             | 1,308                                | 2,738          | 968           | 900           |
| 6                    | Nowgong ... ..                                | 502                    | 423          | 925           | 388                                      | 328          | 716           | 149  | 161          | 310          | 1,039                             | 912                                  | 1,951          | 572           | 565           |
| 7                    | Sibsagar ... ..                               | 727                    | 622          | 1,349         | 622                                      | 498          | 1,120         | 315  | 298          | 613          | 1,664                             | 1,418                                | 3,082          | 1,179         | 1,008         |
| 8                    | Lakhimpur ... ..                              | 516                    | 387          | 903           | 410                                      | 364          | 774           | 305  | 271          | 576          | 1,231                             | 1,022                                | 2,253          | 944           | 832           |
|                      | <b>Total</b> ... ..                           | <b>5,435</b>           | <b>4,339</b> | <b>9,774</b>  | <b>3,974</b>                             | <b>3,463</b> | <b>7,437</b>  | <b>1,882</b>                               | <b>1,878</b> | <b>3,760</b> | <b>11,291</b>                     | <b>9,680</b>                         | <b>20,971</b>  | <b>7,236</b>  | <b>6,900</b>  |
|                      | <b>Total for the Province.</b>                | <b>11,832</b>          | <b>8,787</b> | <b>20,619</b> | <b>6,645</b>                             | <b>5,735</b> | <b>12,380</b> | <b>3,159</b>                               | <b>3,149</b> | <b>6,308</b> | <b>21,636</b>                     | <b>17,671</b>                        | <b>39,307</b>  | <b>13,865</b> | <b>12,425</b> |
|                      | Population (according to the census of 1921). | ...                    | ..           | ...           | ...                                      | ...          | ...           | ...  | ...          | ...          | 101,342                           | 99,389                               | 200,731        | 359,087       | 376,501       |
|                      | <b>Ratio per 1,000</b> ... ..                 | ...                    | ...          | ...           | ...                                      | ...          | ...           | ...  | ...          | ...          | <b>213.49</b>                     | <b>177.79</b>                        | <b>195.81</b>  | <b>37.21</b>  | <b>33.00</b>  |



*Districts of Assam during each month of the year 1924.*

| June.  | July.  | August. | September. | October. | November. | December. | Total.  |
|--------|--------|---------|------------|----------|-----------|-----------|---------|
| 8      | 9      | 10      | 11         | 12       | 13        | 14        | 15      |
| 1,742  | 1,295  | 1,000   | 971        | 1,008    | 976       | 1,256     | 15,900  |
| 5,106  | 4,837  | 4,895   | 5,855      | 7,402    | 9,369     | 8,980     | 75,666  |
| 7,148  | 6,132  | 5,895   | 6,826      | 8,410    | 10,345    | 10,236    | 91,566  |
| 2,615  | 2,438  | 2,045   | 2,173      | 2,018    | 2,493     | 2,457     | 24,523  |
| 3,820  | 2,730  | 1,655   | 1,585      | 1,366    | 1,298     | 1,469     | 22,629  |
| 1,275  | 1,064  | 1,092   | 1,072      | 1,150    | 1,051     | 1,298     | 12,719  |
| 817    | 755    | 682     | 796        | 719      | 658       | 650       | 8,523   |
| 1,264  | 1,168  | 1,292   | 1,621      | 1,612    | 1,480     | 1,206     | 14,807  |
| 1,011  | 1,077  | 1,262   | 1,124      | 1,299    | 1,252     | 1,111     | 12,360  |
| 10,802 | 9,232  | 8,028   | 8,371      | 8,164    | 8,231     | 8,251     | 95,561  |
| 17,950 | 15,364 | 13,923  | 15,197     | 16,574   | 18,576    | 18,487    | 187,127 |
| 2.61   | 2.24   | 2.03    | 2.21       | 2.41     | 2.71      | 2.69      | 27.30   |

*Age in the districts of Assam during the year 1924.*

| 5 and under 10. |         | 10 and under 15. |         | 15 and under 20. |         | 20 and under 30. |         | 30 and under 40. |         | 40 and under 50. |         | 50 and under 60. |         | 60 and upwards. |         |
|-----------------|---------|------------------|---------|------------------|---------|------------------|---------|------------------|---------|------------------|---------|------------------|---------|-----------------|---------|
| Male.           | Female. | Male.            | Female. | Male.            | Female. | Male.            | Female. | Male.            | Female. | Male.            | Female. | Male.            | Female. | Male.           | Female. |
| 17              | 18      | 19               | 20      | 21               | 22      | 23               | 24      | 25               | 26      | 27               | 28      | 29               | 30      | 31              | 32      |
| 719             | 637     | 414              | 351     | 334              | 481     | 739              | 1,187   | 824              | 846     | 608              | 428     | 467              | 378     | 856             | 755     |
| 3,103           | 2,591   | 1,946            | 1,259   | 1,642            | 2,438   | 4,246            | 6,169   | 4,496            | 3,974   | 3,697            | 2,324   | 2,767            | 2,081   | 4,988           | 3,741   |
| 3,822           | 3,228   | 2,360            | 1,610   | 1,976            | 2,919   | 4,985            | 7,356   | 5,320            | 4,820   | 4,395            | 2,752   | 3,234            | 2,459   | 5,844           | 4,496   |
| 1,119           | 913     | 654              | 482     | 563              | 728     | 1,276            | 1,462   | 1,468            | 1,047   | 1,076            | 651     | 849              | 544     | 1,237           | 817     |
| 1,479           | 1,315   | 766              | 553     | 536              | 618     | 931              | 1,317   | 1,037            | 1,005   | 967              | 657     | 791              | 562     | 960             | 707     |
| 445             | 393     | 280              | 233     | 245              | 335     | 580              | 824     | 812              | 836     | 724              | 503     | 618              | 393     | 485             | 407     |
| 394             | 339     | 285              | 219     | 215              | 254     | 475              | 496     | 458              | 378     | 425              | 271     | 334              | 234     | 365             | 293     |
| 504             | 459     | 317              | 236     | 290              | 432     | 615              | 1,080   | 815              | 973     | 796              | 547     | 717              | 424     | 816             | 457     |
| 445             | 437     | 261              | 242     | 242              | 374     | 685              | 721     | 890              | 837     | 852              | 514     | 588              | 343     | 463             | 381     |
| 4,386           | 3,856   | 2,563            | 2,025   | 2,091            | 2,741   | 4,562            | 5,900   | 5,480            | 5,076   | 4,840            | 3,143   | 3,897            | 2,500   | 4,332           | 3,062   |
| 8,208           | 7,084   | 4,923            | 3,635   | 4,067            | 5,660   | 9,547            | 13,256  | 10,800           | 9,896   | 9,235            | 5,895   | 7,131            | 4,959   | 10,176          | 7,558   |
| 580,966         | 568,880 | 433,305          | 342,744 | 278,664          | 292,075 | 577,151          | 613,934 | 556,071          | 448,620 | 359,844          | 259,435 | 198,849          | 149,979 | 137,230         | 118,126 |
| 14.13           | 12.45   | 11.36            | 10.60   | 14.59            | 19.37   | 16.54            | 21.59   | 19.42            | 22.06   | 25.66            | 22.72   | 35.86            | 33.06   | 74.12           | 63.98   |

## IMPERIAL STATEMENT No. V.—Deaths registered according

| No.           | Districts.                    | Population according |         |        |           |           |           |              |           |           |
|---------------|-------------------------------|----------------------|---------|--------|-----------|-----------|-----------|--------------|-----------|-----------|
|               |                               | Christians.          |         |        | Hindus.   |           |           | Muhammadans. |           |           |
|               |                               | Male.                | Female. | Total. | Male.     | Female.   | Total.    | Male.        | Female.   | Total.    |
| 1             | 2                             | 3                    | 4       | 5      | 6         | 7         | 8         | 9            | 10        | 11        |
| SURMA VALLEY. |                               |                      |         |        |           |           |           |              |           |           |
| 1             | Cachar ... ..                 | 848                  | 762     | 1,610  | 166,782   | 152,463   | 319,245   | 89,513       | 81,109    | 170,622   |
| 2             | Sylhet... ..                  | 970                  | 786     | 1,756  | 565,443   | 534,302   | 1,099,745 | 738,916      | 694,474   | 1,433,390 |
|               | Total ... ..                  | 1,818                | 1,548   | 3,366  | 732,225   | 686,765   | 1,418,990 | 828,429      | 775,583   | 1,604,012 |
| ASSAM VALLEY. |                               |                      |         |        |           |           |           |              |           |           |
| 3             | Goalpara ... ..               | 5,434                | 4,878   | 10,312 | 198,904   | 170,488   | 369,392   | 167,765      | 148,725   | 316,490   |
| 4             | Kamrup ... ..                 | 1,926                | 1,735   | 3,661  | 283,554   | 261,085   | 544,639   | 59,886       | 51,560    | 111,546   |
| 5             | Darrang ... ..                | 2,816                | 2,502   | 5,318  | 179,272   | 158,457   | 337,729   | 20,137       | 16,398    | 36,535    |
| 6             | Nowgong ... ..                | 1,465                | 1,460   | 2,925  | 116,864   | 105,235   | 222,099   | 38,655       | 31,927    | 70,582    |
| 7             | Sibsagar ... ..               | 4,557                | 3,823   | 8,380  | 365,885   | 329,131   | 695,016   | 19,370       | 15,624    | 34,994    |
| 8             | Lakhimpur ... ..              | 4,216                | 3,515   | 7,731  | 244,852   | 214,283   | 459,135   | 9,485        | 5,961     | 15,446    |
|               | Total ... ..                  | 20,414               | 17,913  | 38,327 | 1,389,331 | 1,238,679 | 2,628,010 | 315,393      | 270,195   | 585,593   |
|               | Total for the Province ... .. | 22,232               | 19,461  | 41,693 | 2,121,556 | 1,925,444 | 4,047,000 | 1,143,827    | 1,045,778 | 2,189,605 |

## IMPERIAL STATEMENT No. V.—Deaths registered according

| No.           | Districts.                    | Number of deaths registered—concl'd. |         |        |                |         |        |        |         |         |
|---------------|-------------------------------|--------------------------------------|---------|--------|----------------|---------|--------|--------|---------|---------|
|               |                               | Buddhists.                           |         |        | Other classes. |         |        | Total. |         |         |
|               |                               | Male.                                | Female. | Total. | Male.          | Female. | Total. | Male.  | Female. | Total.  |
|               |                               |                                      |         |        |                |         |        |        |         |         |
|               |                               | 30                                   | 31      | 32     | 33             | 34      | 35     | 36     | 37      | 38      |
| SURMA VALLEY. |                               |                                      |         |        |                |         |        |        |         |         |
| 1             | Cachar ... ..                 | ...                                  | ...     | ...    | 384            | 352     | 736    | 8,080  | 7,820   | 15,900  |
| 2             | Sylhet... ..                  | 1                                    | ...     | 1      | 430            | 304     | 734    | 40,330 | 35,336  | 75,666  |
|               | Total ... ..                  | 1                                    | ...     | 1      | 814            | 656     | 1,470  | 48,410 | 43,156  | 91,566  |
| ASSAM VALLEY. |                               |                                      |         |        |                |         |        |        |         |         |
| 3             | Goalpara ... ..               | 12                                   | 8       | 20     | 1,856          | 1,544   | 3,200  | 13,489 | 11,034  | 24,523  |
| 4             | Kamrup ... ..                 | ...                                  | 1       | 1      | 1,775          | 1,795   | 3,570  | 11,720 | 10,909  | 22,629  |
| 5             | Darrang ... ..                | 13                                   | 16      | 29     | 2,011          | 1,890   | 3,901  | 6,587  | 6,132   | 12,719  |
| 6             | Nowgong ... ..                | ...                                  | ...     | ...    | 1,414          | 1,199   | 2,613  | 4,562  | 3,961   | 8,523   |
| 7             | Sibsagar ... ..               | 26                                   | 25      | 51     | 962            | 913     | 1,881  | 7,713  | 7,094   | 14,807  |
| 8             | Lakhimpur ... ..              | 57                                   | 13      | 70     | 1,257          | 1,275   | 2,532  | 6,607  | 5,753   | 12,360  |
|               | Total... ..                   | 108                                  | 63      | 171    | 9,281          | 8,416   | 17,697 | 50,678 | 44,833  | 95,561  |
|               | Total for the Province ... .. | 109                                  | 63      | 172    | 10,095         | 9,072   | 19,167 | 99,088 | 83,039  | 187,127 |

to class in the districts of Assam during the year 1924.

| to the Census of 1921. |         |        |                |         |         |           |           |           | Number of deaths registered. |         |        |         |         |         |              |         |        |
|------------------------|---------|--------|----------------|---------|---------|-----------|-----------|-----------|------------------------------|---------|--------|---------|---------|---------|--------------|---------|--------|
| Buddhists.             |         |        | Other classes. |         |         | Total.    |           |           | Christians.                  |         |        | Hindus. |         |         | Muhammadans. |         |        |
| Male.                  | Female. | Total. | Male.          | Female. | Total.  | Male.     | Female.   | Total.    | Male.                        | Female. | Total. | Male.   | Female. | Total.  | Male.        | Female. | Total. |
| 12                     | 13      | 14     | 15             | 16      | 17      | 18        | 19        | 20        | 21                           | 22      | 23     | 24      | 25      | 26      | 27           | 28      | 29     |
| 33                     | 2       | 35     | 4,418          | 4,554   | 8,972   | 261,594   | 238,890   | 500,484   | 12                           | 19      | 31     | 4,952   | 4,728   | 9,680   | 2,732        | 2,721   | 5,453  |
| 34                     | 9       | 43     | 3,371          | 3,036   | 6,407   | 1,308,734 | 1,232,607 | 2,541,341 | 10                           | 20      | 30     | 16,782  | 14,478  | 31,260  | 23,107       | 20,534  | 43,641 |
| 67                     | 11      | 78     | 7,789          | 7,590   | 15,379  | 1,570,328 | 1,471,497 | 3,041,825 | 22                           | 39      | 61     | 21,734  | 19,206  | 40,940  | 25,839       | 23,255  | 49,094 |
| 547                    | 375     | 922    | 33,978         | 31,429  | 65,407  | 406,628   | 355,895   | 762,523   | 84                           | 91      | 175    | 6,590   | 5,597   | 12,187  | 4,947        | 3,994   | 8,941  |
| 286                    | 113     | 399    | 51,515         | 50,911  | 102,426 | 397,267   | 365,404   | 762,671   | 29                           | 30      | 59     | 8,567   | 7,952   | 16,519  | 1,349        | 1,131   | 2,480  |
| 466                    | 244     | 710    | 50,158         | 46,992  | 97,150  | 252,849   | 224,593   | 477,442   | 67                           | 47      | 114    | 4,032   | 3,719   | 7,751   | 464          | 460     | 924    |
| 24                     | 6       | 30     | 51,723         | 50,648  | 102,371 | 208,731   | 189,276   | 398,007   | 20                           | 29      | 49     | 2,532   | 2,286   | 4,818   | 596          | 447     | 1,043  |
| 1,389                  | 1,055   | 2,444  | 42,712         | 39,651  | 82,363  | 433,913   | 389,284   | 823,197   | 52                           | 51      | 103    | 6,413   | 5,867   | 12,280  | 254          | 238     | 492    |
| 2,516                  | 2,110   | 4,626  | 51,774         | 47,865  | 99,639  | 312,843   | 273,734   | 586,577   | 37                           | 35      | 72     | 5,106   | 4,348   | 9,454   | 150          | 82      | 232    |
| 5,228                  | 3,903   | 9,131  | 281,860        | 267,496 | 549,356 | 2,012,231 | 1,798,186 | 3,810,417 | 289                          | 283     | 572    | 33,240  | 29,769  | 63,009  | 7,760        | 6,352   | 14,112 |
| 5,295                  | 3,914   | 9,209  | 289,649        | 275,086 | 564,735 | 3,582,559 | 3,269,683 | 6,852,242 | 311                          | 322     | 633    | 54,974  | 48,975  | 103,949 | 33,599       | 29,607  | 63,206 |

to class in the districts of Assam during the year 1924—concl'd.

| Ratio of deaths per 1,000 of population. |         |        |         |         |        |              |         |        |            |         |        |                |         |        |        |         |        |
|--|---------|--------|---------|---------|--------|--------------|---------|--------|------------|---------|--------|----------------|---------|--------|--------|---------|--------|
| Christians.                              |         |        | Hindus. |         |        | Muhammadans. |         |        | Buddhists. |         |        | Other classes. |         |        | Total. |         |        |
| Male.                                    | Female. | Total. | Male.   | Female. | Total. | Male.        | Female. | Total. | Male.      | Female. | Total. | Male.          | Female. | Total. | Male.  | Female. | Total. |
| 39                                       | 40      | 41     | 42      | 43      | 44     | 45           | 46      | 47     | 48         | 49      | 50     | 51             | 52      | 53     | 54     | 55      | 56     |
| 14.15                                    | 24.93   | 19.25  | 29.69   | 31.01   | 30.32  | 30.52        | 33.55   | 31.96  | ...        | ...     | ...    | 86.92          | 77.29   | 82.03  | 30.89  | 32.73   | 31.77  |
| 10.31                                    | 25.44   | 17.08  | 29.68   | 27.09   | 28.42  | 31.27        | 29.57   | 30.44  | 29.41      | ...     | 23.25  | 127.55         | 100.13  | 114.56 | 30.81  | 28.66   | 29.77  |
| 12.10                                    | 25.19   | 18.12  | 29.68   | 27.16   | 28.85  | 31.19        | 29.98   | 30.60  | 14.92      | ...     | 12.82  | 104.51         | 86.43   | 95.59  | 30.82  | 29.32   | 30.10  |
| 15.46                                    | 18.65   | 16.97  | 33.13   | 32.83   | 32.99  | 29.48        | 26.85   | 28.25  | 21.94      | 21.33   | 21.69  | 54.62          | 42.76   | 48.92  | 33.17  | 31.00   | 32.16  |
| 15.06                                    | 17.29   | 16.11  | 30.21   | 30.46   | 30.33  | 22.49        | 21.93   | 22.23  | ...        | 8.85    | 2.51   | 34.45          | 35.26   | 34.85  | 29.50  | 29.85   | 29.67  |
| 23.79                                    | 18.78   | 21.44  | 23.49   | 23.47   | 22.95  | 23.04        | 28.05   | 25.29  | 27.89      | 65.57   | 40.84  | 40.09          | 40.22   | 40.15  | 26.05  | 27.30   | 26.64  |
| 13.65                                    | 19.86   | 16.75  | 21.67   | 21.72   | 21.69  | 15.42        | 14.00   | 14.78  | ...        | ...     | ...    | 27.34          | 23.67   | 25.59  | 21.85  | 20.92   | 21.41  |
| 11.41                                    | 13.34   | 12.29  | 17.52   | 17.82   | 17.67  | 13.11        | 15.23   | 14.05  | 18.71      | 23.69   | 20.86  | 22.66          | 23.62   | 22.83  | 17.77  | 18.22   | 17.98  |
| 8.77                                     | 9.96    | 9.31   | 20.85   | 20.29   | 25.91  | 15.81        | 13.75   | 15.02  | 22.65      | 6.16    | 15.13  | 24.27          | 26.63   | 25.41  | 21.12  | 21.01   | 21.07  |
| 14.15                                    | 15.79   | 14.92  | 23.93   | 24.03   | 23.98  | 24.60        | 23.51   | 24.09  | 20.66      | 16.14   | 18.73  | 32.92          | 31.46   | 32.21  | 25.18  | 24.96   | 25.07  |
| 13.89                                    | 16.54   | 15.18  | 25.91   | 25.43   | 25.68  | 29.37        | 28.31   | 28.86  | 20.58      | 16.09   | 18.68  | 34.85          | 33.97   | 33.94  | 27.65  | 26.92   | 27.30  |

## IMPERIAL STATEMENT No. VI.—Deaths registered from different

| 1                          | 2                                     | 3                                       | 4       |         |         | 5           | 6        | 7          | 8       | 9       | 10                       |                       |
|----------------------------|---------------------------------------|---|---------|---------|---------|-------------|----------|------------|---------|---------|--------------------------|-----------------------|
| No.                        | Districts and towns.                  | Population according to Census of 1931. | Births. |         |         | Birth-rate. | Cholera. | Small-pox. | Plague. | Fever.  | Dysentery and diarrhoea. | Respiratory diseases. |
|                            |                                       |   | Male.   | Female. | Total.  |             |          |            |         |         |                          |                       |
| DISTRICTS EXCLUDING TOWNS. |                                       |   |         |         |         |             |          |            |         |         |                          |                       |
| SURMA VALLEY.              |                                       |   |         |         |         |             |          |            |         |         |                          |                       |
| 1                          | Cachar ... ..                         | 488,052                                 | 8,924   | 8,556   | 17,480  | 35·81       | 2,849    | 10         | ...     | 6,709   | 1,528                    | 968                   |
| 2                          | Sylhet ... ..                         | 2,505,744                               | 40,684  | 37,622  | 78,306  | 31·25       | 8,076    | 93         | ...     | 42,633  | 4,172                    | 1,723                 |
|                            | Total ... ..                          | 2,993,796                               | 49,608  | 46,178  | 95,786  | 31·99       | 10,925   | 103        | ...     | 49,342  | 5,700                    | 2,691                 |
| ASSAM VALLEY.              |                                       |   |         |         |         |             |          |            |         |         |                          |                       |
| 3                          | Goalpara ... ..                       | 745,293                                 | 15,235  | 14,087  | 29,322  | 39·34       | 2,085    | 156        | ...     | 20,772  | 207                      | 69                    |
| 4                          | Kamrup ... ..                         | 734,461                                 | 10,781  | 9,972   | 20,753  | 28·25       | 5,339    | 749        | ...     | 12,738  | 552                      | 216                   |
| 5                          | Darrang ... ..                        | 469,078                                 | 7,141   | 6,692   | 13,833  | 29·49       | 264      | 401        | ...     | 8,043   | 847                      | 668                   |
| 6                          | Nowgong ... ..                        | 391,122                                 | 5,546   | 4,997   | 10,543  | 26·95       | 115      | 143        | ...     | 6,547   | 298                      | 112                   |
| 7                          | Sibsagar ... ..                       | 804,955                                 | 11,009  | 11,083  | 22,692  | 28·19       | 165      | 49         | ...     | 8,405   | 1,526                    | 1,097                 |
| 8                          | Lakhimpur ... ..                      | 562,362                                 | 7,810   | 7,357   | 15,167  | 26·87       | 117      | 15         | ...     | 5,941   | 1,487                    | 1,412                 |
|                            | Total ... ..                          | 3,709,271                               | 58,122  | 54,188  | 112,310 | 30·28       | 8,085    | 1,513      | ...     | 62,446  | 4,917                    | 3,574                 |
|                            | Total for districts, excluding towns. | 6,703,067                               | 107,730 | 100,366 | 208,096 | 31·04       | 19,010   | 1,616      | ...     | 111,788 | 10,617                   | 6,265                 |
| TOWNS.                     |                                       |   |         |         |         |             |          |            |         |         |                          |                       |
| SURMA VALLEY.              |                                       |   |         |         |         |             |          |            |         |         |                          |                       |
| 1                          | Silchar ... ..                        | 10,204                                  | 124     | 127     | 251     | 24·60       | 22       | ...        | ...     | 30      | 34                       | 26                    |
| 2                          | Hailakandi ... ..                     | 2,228                                   | 31      | 18      | 49      | 21·99       | 4        | ...        | ...     | 12      | 2                        | 2                     |
| 3                          | Sylhet ... ..                         | 16,912                                  | 228     | 234     | 462     | 27·32       | 35       | ...        | ...     | 90      | 82                       | 63                    |
| 4                          | Karimganj ... ..                      | 4,552                                   | 63      | 53      | 116     | 25·48       | 11       | ...        | ...     | 11      | 19                       | 11                    |
| 5                          | Maulvi Bazar ... ..                   | 3,334                                   | 32      | 45      | 77      | 23·09       | 1        | ...        | ...     | 53      | 5                        | ...                   |
| 6                          | Habiganj ... ..                       | 5,918                                   | 106     | 88      | 194     | 32·78       | 9        | ...        | ...     | 74      | 56                       | 13                    |
| 7                          | Sunamganj ... ..                      | 4,881                                   | 75      | 89      | 164     | 33·59       | 6        | ...        | ...     | 48      | 10                       | 2                     |
|                            | Total ... ..                          | 48,029                                  | 659     | 654     | 1,313   | 27·33       | 88       | ...        | ...     | 318     | 208                      | 117                   |

causes in the districts and towns of the province of Assam during the year 1924.

| 11        |         |                      |                          |         |        | 12                | 13      | 14                                       |            |         |        |                          |                       |           |                   |                  |                              | 15  |
|-----------|---------|----------------------|--------------------------|---------|--------|-------------------|---------|--|------------|---------|--------|--------------------------|-----------------------|-----------|-------------------|------------------|------------------------------|-----|
| Injuries. |         |                      |                          |         |        | All other causes. | Total.  | Ratio of deaths per 1,000 of population. |            |         |        |                          |                       |           |                   |                  |                              | No. |
| Suicide.  |         | Wounds or accidents. | Snakes and wild animals. | Rabies. | Total. |                   |         | Cholera.                                 | Small-pox. | Plague. | Fever. | Dysentery and diarrhoea. | Respiratory diseases. | Injuries. | All other causes. | From all causes. |                              |     |
| Male.     | Female. |                      |                          |         |        |                   |         |  |            |         |        |                          |                       |           |                   | For the year.    | Mean of previous five years. |     |
| 4         | 1       | 136                  | 8                        | 1       | 150    | 3,464             | 15,678  | 5.84                                     | .02        | ...     | 13.75  | 3.13                     | 1.98                  | .31       | 7.09              | 32.12            | 31.79                        | 1   |
| 29        | 12      | 630                  | 65                       | 9       | 745    | 17,254            | 74,696  | 3.22                                     | .03        | ...     | 17.01  | 1.66                     | .68                   | .29       | 6.88              | 29.80            | 31.88                        | 2   |
| 33        | 13      | 766                  | 73                       | 10      | 895    | 20,718            | 90,374  | 3.65                                     | .03        | ...     | 16.48  | 1.90                     | .89                   | .29       | 6.92              | 30.19            | 31.87                        |     |
| 5         | 9       | 152                  | 102                      | 3       | 271    | 488               | 24,048  | 2.79                                     | .21        | ...     | 27.87  | .28                      | .09                   | .36       | .65               | 32.77            | 30.94                        | 3   |
| 37        | 34      | 72                   | 56                       | 8       | 207    | 1,851             | 21,652  | 7.27                                     | 1.02       | ...     | 17.34  | .75                      | .29                   | .28       | 2.52              | 29.48            | 24.91                        | 4   |
| 9         | 7       | 82                   | 53                       | 9       | 160    | 2,039             | 12,472  | .56                                      | .85        | ...     | 17.14  | 1.81                     | 1.42                  | .34       | 4.45              | 26.59            | 32.09                        | 5   |
| 5         | 2       | 38                   | 34                       | 5       | 84     | 1,023             | 8,322   | .29                                      | .36        | ...     | 16.74  | .76                      | .28                   | .21       | 2.62              | 21.28            | 26.09                        | 6   |
| 22        | 20      | 85                   | 19                       | 9       | 155    | 2,984             | 14,381  | .20                                      | .06        | ...     | 10.44  | 1.89                     | 1.36                  | .19       | 3.70              | 17.86            | 25.01                        | 7   |
| 21        | 11      | 103                  | 13                       | 5       | 153    | 2,789             | 11,914  | .20                                      | .02        | ...     | 10.52  | 2.63                     | 2.50                  | .27       | 4.94              | 21.11            | 27.19                        | 8   |
| 99        | 83      | 532                  | 277                      | 39      | 1,030  | 11,224            | 92,789  | 2.18                                     | .40        | ...     | 16.83  | 1.32                     | .96                   | .27       | 3.02              | 25.01            | 27.52                        |     |
| 132       | 96      | 1,298                | 350                      | 49      | 1,925  | 31,942            | 183,163 | 2.83                                     | .24        | ...     | 16.67  | 1.58                     | .93                   | .28       | 4.76              | 27.32            | 29.46                        |     |
| 1         | ...     | 12                   | ...                      | ...     | 13     | 61                | 186     | 2.16                                     | ...        | ...     | 2.94   | 3.33                     | 2.55                  | 1.27      | 5.98              | 18.23            | 16.46                        | 1   |
| ...       | ...     | ...                  | ...                      | ...     | ...    | 16                | 36      | 1.79                                     | ...        | ...     | 5.39   | .89                      | .89                   | ...       | 7.18              | 16.16            | 20.65                        | 2   |
| ...       | ...     | 4                    | ...                      | ...     | 4      | 192               | 466     | 2.07                                     | ...        | ...     | 5.32   | 4.85                     | 3.72                  | .23       | 11.35             | 27.55            | 24.53                        | 3   |
| ...       | ...     | ...                  | 1                        | ...     | 1      | 48                | 101     | 2.41                                     | ...        | ...     | 2.41   | 4.17                     | 2.41                  | .21       | 10.54             | 22.18            | 18.67                        | 4   |
| ...       | ...     | ...                  | ...                      | ...     | ...    | 5                 | 64      | .29                                      | ...        | ...     | 15.89  | 1.49                     | ...                   | ...       | 1.49              | 19.19            | 15.59                        | 5   |
| ...       | ...     | 6                    | ...                      | ...     | 6      | 58                | 216     | 1.52                                     | ...        | ...     | 12.50  | 9.46                     | 2.19                  | 1.01      | 9.80              | 36.49            | 31.59                        | 6   |
| ...       | ...     | 4                    | ...                      | ...     | 4      | 53                | 123     | 1.23                                     | ...        | ...     | 9.83   | 2.04                     | .41                   | .81       | 10.85             | 25.19            | 25.81                        | 7   |
| 1         | ...     | 26                   | 1                        | ...     | 28     | 433               | 1,192   | 1.83                                     | ...        | ...     | 6.62   | 4.33                     | 2.43                  | .58       | 9.01              | 24.81            | 22.46                        |     |

## IMPERIAL STATEMENT No. VI.—Deaths registered from different causes

| 1   | 2                              | 3                                       | 4       |         |         | 5           | 6        | 7          | 8       | 9       | 10                       |                       |
|-----|--------------------------------|---|---------|---------|---------|-------------|----------|------------|---------|---------|--------------------------|-----------------------|
| No. | Districts and towns.           | Population according to Census of 1921. | Births. |         |         | Birth-rate. | Cholera. | Small-pox. | Plague. | Fever.  | Dysentery and diarrhoea. | Respiratory diseases. |
|     |                                |   | Male.   | Female. | Total.  |             |          |            |         |         |                          |                       |
|     | TOWNS—conold.<br>ASSAM VALLEY. |   |         |         |         |             |          |            |         |         |                          |                       |
| 8   | Dhubri ... ..                  | 6,707                                   | 117     | 112     | 229     | 34·14       | 4        | ...        | ...     | 43      | 25                       | 29                    |
| 9   | Goalpara ... ..                | 6,212                                   | 111     | 104     | 215     | 34·61       | 1        | ...        | ...     | 98      | 14                       | 20                    |
| 10  | Gauripur ... ..                | 4,311                                   | 102     | 74      | 176     | 40·83       | 4        | ...        | ...     | 65      | 10                       | 13                    |
| 11  | Gauhati ... ..                 | 16,480                                  | 249     | 265     | 514     | 31·19       | 13       | 29         | ...     | 240     | 65                       | 65                    |
| 12  | Barpeta ... ..                 | 11,730                                  | 294     | 268     | 562     | 47·91       | 55       | ...        | ...     | 139     | 50                       | 61                    |
| 13  | Tezpur ... ..                  | 7,341                                   | 103     | 108     | 211     | 28·74       | ...      | 1          | ...     | 68      | 21                       | 37                    |
| 14  | Mangaldai ... ..               | 1,023                                   | 9       | 16      | 25      | 24·44       | 1        | ...        | ...     | 11      | 2                        | ...                   |
| 15  | Nowgong ... ..                 | 6,885                                   | 95      | 106     | 201     | 29·19       | ...      | 1          | ...     | 85      | 27                       | 16                    |
| 16  | Jorhat ... ..                  | 6,626                                   | 103     | 91      | 194     | 29·28       | 1        | ...        | ...     | 27      | 31                       | 26                    |
| 17  | Sibsagar ... ..                | 5,329                                   | 107     | 100     | 207     | 38·84       | ...      | ...        | ...     | 61      | 12                       | 2                     |
| 18  | Golaghat ... ..                | 3,655                                   | 62      | 52      | 114     | 31·19       | 1        | ...        | ...     | 61      | 7                        | 4                     |
| 19  | Nazira... ..                   | 2,632                                   | 47      | 57      | 104     | 39·51       | ...      | ...        | ...     | 59      | 6                        | 2                     |
| 20  | Dibrugarh ... ..               | 16,007                                  | 223     | 208     | 431     | 26·92       | ...      | ...        | ...     | 75      | 54                       | 36                    |
| 21  | North Lakhimpur ... ..         | 1,966                                   | 32      | 18      | 50      | 25·43       | ...      | ...        | ...     | 16      | 2                        | 4                     |
| 22  | Doom Dooma ... ..              | 1,162                                   | 16      | 12      | 28      | 24·09       | 4        | ...        | ...     | 14      | 3                        | 10                    |
| 23  | Tinsukia ... ..                | 3,080                                   | 48      | 37      | 85      | 27·59       | ...      | ...        | ...     | 30      | 5                        | 1                     |
|     | Total ... ..                   | 101,146                                 | 1,718   | 1,628   | 3,346   | 33·08       | 84       | 31         | ...     | 1,092   | 334                      | 326                   |
|     | Total for towns ... ..         | 149,175                                 | 2,377   | 2,282   | 4,659   | 31·23       | 172      | 31         | ...     | 1,410   | 542                      | 443                   |
|     | Total for the Province ... ..  | 6,852,242                               | 110,107 | 102,648 | 212,755 | 31·04       | 19,182   | 1,647      | ...     | 113,198 | 11,159                   | 6,708                 |

## Supplementary (optional) Statement

| Towns.           | 1        |        | 2              |        | 3        |        | 4                |        | 5          |        | 6             |        |
|------------------|----------|--------|----------------|--------|----------|--------|------------------|--------|------------|--------|---------------|--------|
|                  | Malaria. |        | Enteric fever. |        | Measles. |        | Relapsing fever. |        | Kala-azar. |        | Other fevers. |        |
|                  | Deaths.  | Ratio. | Deaths.        | Ratio. | Deaths.  | Ratio. | Deaths.          | Ratio. | Deaths.    | Ratio. | Deaths.       | Ratio. |
| Silchar ... ..   | 7        | ·68    | ...            | ...    | ...      | ...    | ...              | ...    | 2          | ·19    | 21            | 2·05   |
| Sylhet ... ..    | 77       | 4·55   | ...            | ...    | 2        | ·11    | ...              | ...    | 8          | ·47    | 3             | ·18    |
| Gauhati ... ..   | 64       | 3·88   | 4              | ·24    | 1        | ·06    | ...              | ...    | 52         | 3·16   | 119           | 7·22   |
| Barpeta ... ..   | 98       | 8·35   | 1              | ·08    | ...      | ...    | ...              | ...    | 25         | 2·13   | 15            | 1·28   |
| Dhubri ... ..    | 20       | 2·98   | 5              | ·74    | ...      | ...    | 1                | ·14    | 9          | 1·34   | 8             | 1·19   |
| Goalpara ... ..  | 17       | 2·73   | ...            | ...    | 1        | ·16    | ...              | ...    | 20         | 3·22   | 60            | 9·66   |
| Tezpur ... ..    | 21       | 2·86   | 2              | ·27    | ...      | ...    | ...              | ...    | 32         | 4·36   | 13            | 1·77   |
| Nowgong ... ..   | ...      | ...    | ...            | ...    | ...      | ...    | ...              | ...    | 63         | 9·15   | 22            | 3·19   |
| Jorhat ... ..    | 15       | 2·26   | 5              | ·75    | ...      | ...    | ...              | ...    | 7          | 1·05   | ...           | ...    |
| Dibrugarh ... .. | 12       | ·74    | 7              | ·43    | ...      | ...    | ...              | ...    | 9          | ·56    | 47            | 3·93   |
| Shillong ... ..  | 8        | ·46    | 1              | ·05    | ...      | ...    | ...              | ...    | ...        | ...    | 27            | 1·56   |

in the districts and towns of the province of Assam during the year 1924—concluded.

|          |         | 11                   |                          |         |        | 12       | 13                | 14     |  |         |        |                          |                       |           |                   |                  |                              | 15 |         |
|----------|---------|----------------------|--------------------------|---------|--------|----------|-------------------|--------|--|---------|--------|--------------------------|-----------------------|-----------|-------------------|------------------|------------------------------|----|---------|
|          |         | Injuries.            |                          |         |        |          | All other causes. | Total. | Ratio of deaths per 1,000 of population. |         |        |                          |                       |           |                   |                  |                              |    | Number. |
| Suicide. |         | Wounds or accidents. | Snakes and wild animals. | Rabies. | Total. | Cholera. |                   |        | Small-pox.                               | Plague. | Fever. | Dysentery and diarrhoea. | Respiratory diseases. | Injuries. | All other causes. | From all causes. |                              |    |         |
| Male.    | Female. |                      |                          |         |        |          |                   |        |  |         |        |                          |                       |           |                   | For the year.    | Mean of previous five years. |    |         |
| ...      | ...     | 6                    | ...                      | ...     | 6      | 82       | 189               | ·59    | ...                                      | ...     | 6·41   | 3·73                     | 4·32                  | ·89       | 12·23             | 28·18            | 37·87                        | 8  |         |
| ...      | ...     | 5                    | ...                      | ...     | 5      | 22       | 160               | ·16    | ...                                      | ...     | 15·78  | 2·25                     | 3·22                  | ·80       | 3·54              | 25·76            | 31·55                        | 9  |         |
| ...      | ...     | 1                    | ...                      | ...     | 1      | 33       | 126               | ·93    | ...                                      | ...     | 15·08  | 2·32                     | 3·01                  | ·23       | 7·65              | 29·23            | 16·93                        | 10 |         |
| ...      | ...     | 8                    | 1                        | ...     | 9      | 137      | 558               | ·79    | 1·76                                     | ...     | 14·56  | 3·94                     | 3·94                  | ·54       | 8·31              | 33·86            | 50·52                        | 11 |         |
| ...      | ...     | 10                   | 1                        | ...     | 11     | 103      | 419               | 4·69   | ...                                      | ...     | 11·85  | 4·26                     | 5·20                  | ·94       | 8·78              | 35·72            | 26·76                        | 12 |         |
| 1        | ...     | 7                    | ...                      | 3       | 11     | 80       | 218               | ...    | ·14                                      | ...     | 9·26   | 2·86                     | 5·04                  | 1·49      | 10·89             | 29·69            | 19·75                        | 13 |         |
| ...      | ...     | 1                    | ...                      | ...     | 1      | 14       | 29                | ·97    | ...                                      | ...     | 10·75  | 1·95                     | ...                   | ·97       | 13·68             | 28·35            | 22·48                        | 14 |         |
| 1        | ...     | 6                    | 1                        | ...     | 8      | 64       | 201               | ...    | ·14                                      | ...     | 12·34  | 3·92                     | 2·32                  | 1·16      | 9·29              | 29·19            | 27·88                        | 15 |         |
| 1        | ...     | 4                    | 1                        | ...     | 6      | 61       | 152               | ·15    | ...                                      | ...     | 4·07   | 4·68                     | 3·92                  | ·90       | 9·20              | 22·94            | 20·82                        | 16 |         |
| ...      | ...     | 2                    | ...                      | ...     | 2      | 35       | 112               | ...    | ...                                      | ...     | 11·44  | 2·25                     | ·37                   | ·37       | 6·56              | 21·01            | 18·01                        | 17 |         |
| 1        | 1       | 2                    | ...                      | ...     | 4      | 15       | 92                | ·27    | ...                                      | ...     | 16·69  | 1·91                     | 1·09                  | 1·09      | 4·10              | 25·17            | 24·89                        | 18 |         |
| ...      | ...     | ...                  | ...                      | ...     | ...    | 3        | 70                | ...    | ...                                      | ...     | 22·41  | 2·27                     | ·76                   | ...       | 1·13              | 26·59            | 16·33                        | 19 |         |
| 1        | ...     | 15                   | ...                      | ...     | 16     | 137      | 318               | ...    | ...                                      | ...     | 4·68   | 3·37                     | 2·24                  | ·99       | 8·55              | 19·86            | 22·24                        | 20 |         |
| ...      | ...     | 2                    | ...                      | ...     | 2      | 22       | 46                | ...    | ...                                      | ...     | 8·14   | 1·01                     | 2·03                  | 1·01      | 11·19             | 23·39            | 29·50                        | 21 |         |
| ...      | ...     | 1                    | ...                      | ...     | 1      | 4        | 36                | 3·44   | ...                                      | ...     | 12·04  | 2·58                     | 8·60                  | ·86       | 3·44              | 30·98            | 30·12                        | 22 |         |
| ...      | ...     | 1                    | ...                      | ...     | 1      | 9        | 46                | ...    | ...                                      | ...     | 9·74   | 1·62                     | ·32                   | ·32       | 2·92              | 14·93            | 10·06                        | 23 |         |
| 5        | 1       | 71                   | 4                        | 3       | 84     | 821      | 2,772             | ·83    | ·30                                      | ...     | 10·79  | 3·30                     | 3·22                  | ·83       | 8·11              | 27·40            | 25·19                        |    |         |
| 6        | 1       | 97                   | 5                        | 3       | 112    | 1,254    | 3,964             | 1·15   | ·20                                      | ...     | 9·45   | 3·63                     | 2·97                  | ·75       | 8·40              | 26·57            | 24·31                        |    |         |
| 138      | 97      | 1,395                | 355                      | 52      | 2,037  | 33,196   | 187,127           | 2·79   | ·24                                      | ...     | 16·52  | 1·62                     | ·98                   | ·29       | 4·84              | 27·30            | 29·34                        |    |         |

VI(a) for the year 1924.

| 7          |        | 8          |        | 9          |        | 10       |        | 11                          |        | 12                       | Deaths under one year. |         |        | Infant mortality rate. |
|------------|--------|------------|--------|------------|--------|----------|--------|-----------------------------|--------|--------------------------|------------------------|---------|--------|------------------------|
| Dysentery. |        | Diarrhoea. |        | Pneumonia. |        | Pthisis. |        | Other respiratory diseases. |        | Deaths from child-birth. | Male.                  | Female. | Total. |                        |
| Deaths.    | Ratio. | Deaths.    | Ratio. | Deaths.    | Ratio. | Deaths.  | Ratio. | Deaths.                     | Ratio. |                          |                        |         |        |                        |
| 20         | 1·96   | 14         | 1·37   | 3          | ·29    | 4        | ·39    | 19                          | 1·86   | 2                        | 21                     | 18      | 39     | 155·38                 |
| 58         | 3·42   | 24         | 1·42   | 12         | ·71    | 13       | ·77    | 38                          | 2·24   | 10                       | 50                     | 45      | 95     | 205·63                 |
| 49         | 2·97   | 16         | ·97    | 39         | 2·36   | 11       | ·67    | 15                          | ·91    | 6                        | 51                     | 49      | 100    | 194·55                 |
| 27         | 2·30   | 23         | 1·9    | 33         | 2·81   | 8        | ·68    | 20                          | 1·70   | 7                        | 60                     | 45      | 105    | 186·83                 |
| 20         | 2·98   | 5          | ·74    | 7          | 1·04   | 8        | 1·19   | 14                          | 2·08   | 4                        | 28                     | 25      | 53     | 231·44                 |
| 9          | 1·45   | 5          | ·80    | 12         | 1·93   | 1        | ·16    | 7                           | 1·12   | 5                        | 28                     | 13      | 41     | 190·70                 |
| 12         | 1·63   | 9          | 1·22   | 13         | 1·77   | 7        | ·95    | 17                          | 2·31   | 6                        | 15                     | 19      | 34     | 161·14                 |
| 27         | 3·92   | ...        | ...    | ...        | ...    | ...      | ...    | 16                          | 2·32   | 5                        | 7                      | 17      | 24     | 119·40                 |
| 22         | 3·32   | 9          | 1·35   | 10         | 1·50   | 4        | ·60    | 12                          | 1·81   | 4                        | 26                     | 11      | 37     | 190·72                 |
| 47         | 2·93   | 7          | ·43    | 6          | ·37    | 2        | ·12    | 28                          | 1·74   | 4                        | 20                     | 21      | 41     | 95·13                  |
| 17         | ·99    | 6          | ·35    | 5          | ·29    | ...      | ...    | 20                          | 1·16   | 1                        | 35                     | 26      | 61     | 113·17                 |

## IMPERIAL STATEMENT No. VII.—Deaths registered from Cholera in the

| Number.       | Districts.             | Circles of Registration. |  | Villages.                |  | January. | February. | March. | April. | May.  |
|---------------|------------------------|--------------------------|--|--------------------------|--|----------|-----------|--------|--------|-------|
|               |                        | Number in each district. | Number from which deaths from cholera were reported. | Number in each district. | Number from which deaths from cholera were reported. |          |           |        |        |       |
| 1             | 2                      | 3                        | 4  | 5                        | 6  | 7        | 8         | 9      | 10     | 11    |
| SURMA VALLEY. |                        |                          |  |                          |  |          |           |        |        |       |
| 1             | Cachar ... ..          | 12                       | 11   | 1,103                    | 241  | 33       | 84        | 316    | 877    | 946   |
| 2             | Sylhet ... ..          | 40                       | 39   | 10,781                   | 1,339  | 383      | 332       | 481    | 965    | 1,085 |
|               | Total ... ..           | 52                       | 50   | 11,884                   | 1,580  | 416      | 416       | 797    | 1,842  | 2,031 |
| ASSAM VALLEY. |                        |                          |  |                          |  |          |           |        |        |       |
| 3             | Goalpara ... ..        | 22                       | 20   | 2,137                    | 371  | 23       | 2         | 2      | 11     | 59    |
| 4             | Kamrup ... ..          | 15                       | 14   | 1,954                    | 175  | 13       | 10        | 98     | 744    | 1,002 |
| 5             | Darrang ... ..         | 13                       | 9  | 1,406                    | 97   | 2        | 7         | 27     | 26     | 48    |
| 6             | Nowgong ... ..         | 10                       | 7  | 1,495                    | 12*  | 1        | 1         | 6      | 11     | 7     |
| 7             | Sibsagar ... ..        | 15                       | 10   | 2,143                    | 103  | 8        | 3         | 7      | 22     | 19    |
| 8             | Lakhimpur ... ..       | 15                       | 5  | 1,702                    | 3  | 2        | 2         | 5      | 3      | 4     |
|               | Total ... ..           | 90                       | 65   | 10,837                   | 761  | 40       | 25        | 145    | 817    | 1,139 |
|               | Total for the Province | 142                      | 115  | 22,721                   | 2,341  | 465      | 441       | 942    | 2,659  | 3,170 |

\* Mauzas.

## IMPERIAL STATEMENT No. VIII.—Deaths registered from

| Number.       | Districts.             | Circles of Registration. |  | Villages.                |  | January. | February. | March. | April. | May. | June. | July. |
|---------------|------------------------|--------------------------|--|--------------------------|--|----------|-----------|--------|--------|------|-------|-------|
|               |                        | Number in each district. | Number from which deaths from small-pox were reported. | Number in each district. | Number from which deaths from small-pox were reported. |          |           |        |        |      |       |       |
| 1             | 2                      | 3                        | 4  | 5                        | 6  | 7        | 8         | 9      | 10     | 11   | 12    | 13    |
| SURMA VALLEY. |                        |                          |  |                          |  |          |           |        |        |      |       |       |
| 1             | Cachar ... ..          | 12                       | 2  | 1,103                    | 2  | 5        | ...       | 4      | ...    | ...  | 1     | ...   |
| 2             | Sylhet ... ..          | 40                       | 10   | 10,781                   | 30   | 20       | 12        | 15     | 8      | 12   | 9     | 3     |
|               | Total ... ..           | 52                       | 12   | 11,884                   | 32   | 25       | 12        | 19     | 8      | 12   | 10    | 3     |
| ASSAM VALLEY. |                        |                          |  |                          |  |          |           |        |        |      |       |       |
| 3             | Goalpara ... ..        | 22                       | 12   | 2,137                    | 70   | 7        | 8         | 13     | 27     | 29   | 22    | 16    |
| 4             | Kamrup ... ..          | 15                       | 13   | 1,954                    | 59   | 51       | 45        | 103    | 189    | 97   | 123   | 69    |
| 5             | Darrang ... ..         | 13                       | 10   | 1,406                    | 119  | 83       | 30        | 59     | 39     | 43   | 74    | 17    |
| 6             | Nowgong ... ..         | 10                       | 8  | 1,495                    | 6*   | 48       | 26        | 25     | 20     | 16   | 4     | 1     |
| 7             | Sibsagar ... ..        | 15                       | 9  | 2,143                    | 17   | 4        | 3         | ...    | 4      | 3    | 5     | 5     |
| 8             | Lakhimpur ... ..       | 15                       | 3  | 1,702                    | 1  | 1        | 5         | 1      | ...    | ...  | 2     | ...   |
|               | Total ... ..           | 90                       | 55   | 10,837                   | 272  | 189      | 117       | 201    | 279    | 188  | 230   | 108   |
|               | Total for the Province | 142                      | 67   | 22,721                   | 304  | 214      | 129       | 220    | 287    | 200  | 240   | 111   |

\* Mauzas.



*districts of Assam during each month of the year 1924.*

| June. | July. | August. | September. | October. | November. | December. | Total. |         |        | Ratio of deaths per 1,000 of population. |         |        | Mean ratio per 1,000 of previous five years. | Number. |
|-------|-------|---------|------------|----------|-----------|-----------|--------|---------|--------|--|---------|--------|--|---------|
|       |       |         |            |          |           |           | Male.  | Female. | Total. | Male.                                    | Female. | Total. |  |         |
| 12    | 13    | 14      | 15         | 16       | 17        | 18        | 19     | 20      | 21     | 22                                       | 23      | 24     | 25   | 26      |
| 439   | 131   | 10      | 7          | 1        | 20        | 11        | 1,534  | 1,341   | 2,875  | 5·86                                     | 5·61    | 5·74   | 2·27   | 1       |
| 555   | 162   | 55      | 95         | 988      | 1,828     | 1,209     | 4,387  | 3,751   | 8,138  | 3·35                                     | 3·04    | 3·20   | 2·19   | 2       |
| 994   | 293   | 65      | 102        | 989      | 1,848     | 1,220     | 5,921  | 5,092   | 11,013 | 3·77                                     | 3·46    | 3·62   | 2·21   |         |
| 332   | 407   | 94      | 133        | 92       | 502       | 437       | 1,058  | 1,036   | 2,094  | 2·60                                     | 2·91    | 2·75   | 1·19   | 3       |
| 1,852 | 1,082 | 220     | 213        | 68       | 74        | 31        | 2,531  | 2,876   | 5,407  | 6·37                                     | 7·87    | 7·09   | 3·36   | 4       |
| 41    | 19    | 18      | 13         | 30       | 18        | 16        | 147    | 118     | 265    | ·58                                      | ·52     | ·55    | 3·30   | 5       |
| 27    | 14    | 30      | 3          | 4        | 3         | 8         | 65     | 50      | 115    | ·31                                      | ·26     | ·29    | 1·79   | 6       |
| 26    | 19    | 11      | 14         | 17       | 14        | 7         | 93     | 74      | 167    | ·21                                      | ·19     | ·20    | 1·20   | 7       |
| 18    | 20    | 13      | 15         | 18       | 13        | 8         | 63     | 58      | 121    | ·20                                      | ·21     | ·20    | ·59  | 8       |
| 2,296 | 1,561 | 386     | 391        | 229      | 624       | 507       | 3,957  | 4,212   | 8,169  | 1·96                                     | 2·34    | 2·14   | 1·86   |         |
| 3,290 | 1,854 | 451     | 493        | 1,218    | 2,472     | 1,727     | 9,878  | 9,304   | 19,182 | 2·75                                     | 2·84    | 2·79   | 2·02   |         |

*Small-pox in the districts of Assam during each month of the year 1924.*

| August. | September. | October. | November. | December. | Total. |         |        | Number of deaths among children. |                  | Ratio of deaths per 1,000 of population. |         |        | Mean ratio per 1,000 of previous five years. | Number. |
|---------|------------|----------|-----------|-----------|--------|---------|--------|----------------------------------|------------------|--|---------|--------|--|---------|
|         |            |          |           |           | Male.  | Female. | Total. | Under 1 year.                    | One to 10 years. | Male.                                    | Female. | Total. |  |         |
| 14      | 15         | 16       | 17        | 18        | 19     | 20      | 21     | 22                               | 23               | 24                                       | 25      | 26     | 27   | 28      |
| ...     | ...        | ...      | ...       | ...       | 5      | 5       | 10     | ...                              | ...              | ·02                                      | ·02     | ·02    | ·02  | 1       |
| 2       | 3          | 2        | 6         | 1         | 48     | 45      | 93     | 8                                | 7                | ·03                                      | ·03     | ·03    | ·18  | 2       |
| 2       | 3          | 2        | 6         | 1         | 53     | 50      | 103    | 8                                | 7                | ·03                                      | ·03     | ·03    | ·16  |         |
| 9       | 23         | ...      | ...       | 2         | 93     | 63      | 156    | 8                                | 12               | ·23                                      | ·18     | ·20    | ·52  | 3       |
| 26      | 17         | 8        | 16        | 34        | 422    | 356     | 778    | 107                              | 269              | 1·06                                     | ·97     | 1·02   | ·56  | 4       |
| 30      | 16         | 3        | 2         | 6         | 219    | 183     | 402    | 44                               | 87               | ·86                                      | ·81     | ·84    | ·66  | 5       |
| 4       | 1          | 3        | ...       | 1         | 76     | 68      | 144    | 9                                | 24               | ·36                                      | ·36     | ·36    | 1·31   | 6       |
| 6       | ...        | 5        | 4         | 10        | 24     | 25      | 49     | ...                              | ...              | ·05                                      | ·06     | ·05    | ·18  | 7       |
| 2       | ...        | 4        | ...       | ...       | 8      | 7       | 15     | ...                              | ...              | ·02                                      | ·02     | ·02    | ·06  | 8       |
| 77      | 57         | 23       | 22        | 53        | 842    | 702     | 1,544  | 168                              | 392              | ·41                                      | ·39     | ·40    | ·48  |         |
| 79      | 60         | 25       | 28        | 54        | 895    | 752     | 1,647  | 176                              | 399              | ·25                                      | ·23     | ·24    | ·34  |         |

## IMPERIAL STATEMENT No. IX.—Deaths registered from Fevers

| Number.       | Districts.                 | Circles of Registration. |   | Villages.                |   | January. | February. | March. | April. | May.  |
|---------------|----------------------------|--------------------------|---|--------------------------|---|----------|-----------|--------|--------|-------|
|               |                            | Number in each district. | Number from which deaths from fevers were reported. | Number in each district. | Number from which deaths from fevers were reported. |          |           |        |        |       |
| 1             | 2                          | 3                        | 4   | 5                        | 6   | 7        | 8         | 9      | 10     | 11    |
| SURMA VALLEY. |                            |                          |   |                          |   |          |           |        |        |       |
| 1             | Cachar ... ..              | 12                       | 12  | 1,103                    | 539   | 661      | 464       | 486    | 628    | 638   |
| 2             | Sylhet ... ..              | 40                       | 39  | 10,781                   | 8,893   | 3,756    | 3,125     | 2,793  | 2,923  | 3,088 |
|               | Total ... ..               | 52                       | 51  | 11,884                   | 9,432   | 4,417    | 3,589     | 3,279  | 3,551  | 3,726 |
| ASSAM VALLEY. |                            |                          |   |                          |   |          |           |        |        |       |
| 3             | Goalpara ... ..            | 22                       | 22  | 2,137                    | 2,426   | 1,645    | 1,371     | 1,439  | 1,601  | 1,686 |
| 4             | Kamrup ... ..              | 15                       | 14  | 1,954                    | 1,047   | 880      | 689       | 1,005  | 1,207  | 1,439 |
| 5             | Darrang ... ..             | 13                       | 12  | 1,406                    | 1,377   | 514      | 414       | 678    | 728    | 689   |
| 6             | Nowgong ... ..             | 10                       | 10  | 1,495                    | 53*   | 408      | 410       | 538    | 609    | 678   |
| 7             | Sibsagar ... ..            | 15                       | 15  | 2,143                    | 1,310   | 492      | 423       | 591    | 653    | 724   |
| 8             | Lakhimpur ... ..           | 15                       | 15  | 1,702                    | 1,396   | 454      | 378       | 372    | 373    | 517   |
|               | Total ... ..               | 90                       | 88  | 10,837                   | 7,609   | 4,393    | 3,685     | 4,623  | 5,171  | 5,733 |
|               | Total for the Province ... | 142                      | 139   | 22,721                   | 17,041  | 8,810    | 7,274     | 7,902  | 8,722  | 9,459 |

\* Mauzas.

## IMPERIAL STATEMENT No. X.—Deaths registered from

| Number.       | Districts.                | Circles of Registration. |  | Villages.                |  | January. | February. | March. | April. | May.  |
|---------------|---------------------------|--------------------------|--|--------------------------|--|----------|-----------|--------|--------|-------|
|               |                           | Number in each district. | Number from which deaths from dysentery and diarrhoea were reported. | Number in each district. | Number from which deaths from dysentery and diarrhoea were reported. |          |           |        |        |       |
| 1             | 2                         | 3                        | 4  | 5                        | 6  | 7        | 8         | 9      | 10     | 11    |
| SURMA VALLEY. |                           |                          |  |                          |  |          |           |        |        |       |
| 1             | Cachar ... ..             | 12                       | 11   | 1,103                    | 196  | 111      | 77        | 108    | 201    | 180   |
| 2             | Sylhet ... ..             | 40                       | 39   | 10,781                   | 1,686  | 322      | 264       | 296    | 396    | 457   |
|               | Total ... ..              | 52                       | 50   | 11,884                   | 1,882  | 433      | 341       | 404    | 597    | 637   |
| ASSAM VALLEY  |                           |                          |  |                          |  |          |           |        |        |       |
| 3             | Goalpara ... ..           | 22                       | 20   | 2,137                    | 137  | 15       | 4         | 12     | 9      | 16    |
| 4             | Kamrup ... ..             | 15                       | 15   | 1,954                    | 138  | 33       | 33        | 34     | 69     | 51    |
| 5             | Darrang ... ..            | 13                       | 12   | 1,406                    | 273  | 38       | 27        | 40     | 84     | 72    |
| 6             | Nowgong ... ..            | 10                       | 10   | 1,495                    | 28*  | 28       | 18        | 33     | 25     | 23    |
| 7             | Sibsagar ... ..           | 15                       | 14   | 2,143                    | 509  | 82       | 55        | 68     | 132    | 117   |
| 8             | Lakhimpur ... ..          | 15                       | 12   | 1,702                    | 96   | 73       | 61        | 66     | 91     | 108   |
|               | Total ... ..              | 90                       | 83   | 10,837                   | 1,181  | 269      | 198       | 253    | 410    | 387   |
|               | Total for the Province... | 142                      | 133  | 22,721                   | 3,063  | 702      | 539       | 657    | 1,007  | 1,024 |

\* Mauzas.

*in the districts of Assam during each month of the year 1924.*

| June.  | July  | August. | September. | October. | November. | December. | Total. |         |         | Ratio of deaths per 1,000 of population. |         |        | Mean ratio per 1,000 of previous five years. | Number. |
|--------|-------|---------|------------|----------|-----------|-----------|--------|---------|---------|--|---------|--------|--|---------|
|        |       |         |            |          |           |           | Male.  | Female. | Total.  | Male.                                    | Female. | Total. |  |         |
| 12     | 13    | 14      | 15         | 16       | 17        | 18        | 19     | 20      | 21      | 22                                       | 23      | 24     | 25   | 26      |
| 723    | 663   | 517     | 491        | 475      | 438       | 567       | 3,498  | 3,253   | 6,751   | 13.37                                    | 13.61   | 13.49  | 16.01  | 1       |
| 3,253  | 3,259 | 3,371   | 3,901      | 4,111    | 4,478     | 4,851     | 23,219 | 19,690  | 42,909  | 17.74                                    | 15.97   | 16.88  | 18.57  | 2       |
| 3,976  | 3,922 | 3,888   | 4,392      | 4,586    | 4,916     | 5,418     | 26,717 | 22,943  | 49,660  | 17.01                                    | 15.59   | 16.32  | 18.15  |         |
| 2,139  | 1,880 | 1,796   | 1,874      | 1,785    | 1,866     | 1,896     | 11,582 | 9,396   | 20,978  | 28.48                                    | 26.40   | 27.51  | 26.74  | 3       |
| 1,490  | 1,216 | 1,090   | 1,014      | 996      | 945       | 1,146     | 6,969  | 6,148   | 13,117  | 17.54                                    | 16.82   | 17.19  | 16.58  | 4       |
| 823    | 698   | 651     | 701        | 661      | 678       | 892       | 4,239  | 3,883   | 8,122   | 16.76                                    | 17.29   | 17.01  | 15.34  | 5       |
| 660    | 604   | 509     | 638        | 549      | 509       | 520       | 3,559  | 3,073   | 6,632   | 17.05                                    | 16.23   | 16.66  | 17.27  | 6       |
| 783    | 716   | 714     | 970        | 908      | 868       | 741       | 4,615  | 3,998   | 8,613   | 10.63                                    | 10.27   | 10.46  | 11.91  | 7       |
| 477    | 538   | 676     | 571        | 613      | 607       | 500       | 3,216  | 2,860   | 6,076   | 10.28                                    | 10.45   | 10.35  | 10.81  | 8       |
| 6,372  | 5,647 | 5,436   | 5,763      | 5,542    | 5,473     | 5,695     | 34,180 | 29,358  | 63,538  | 16.98                                    | 16.32   | 16.67  | 16.63  |         |
| 10,348 | 9,569 | 9,324   | 10,160     | 10,128   | 10,389    | 11,113    | 60,897 | 52,301  | 113,198 | 16.99                                    | 15.99   | 16.52  | 17.30  |         |

*Dysentery and Diarrhœa in the districts of Assam during each month of the year 1924.*

| June. | July. | August. | September. | October. | November. | December. | Total. |         |        | Ratio of deaths per 1,000 of population. |         |        | Mean ratio per 1,000 of previous five years. | Number. |
|-------|-------|---------|------------|----------|-----------|-----------|--------|---------|--------|--|---------|--------|--|---------|
|       |       |         |            |          |           |           | Male.  | Female. | Total. | Male.                                    | Female. | Total. |  |         |
| 12    | 13    | 14      | 15         | 16       | 17        | 18        | 19     | 20      | 21     | 22                                       | 23      | 24     | 25   | 26      |
| 200   | 129   | 111     | 97         | 101      | 107       | 142       | 767    | 797     | 1,564  | 2.94                                     | 3.33    | 3.12   | 2.26   | 1       |
| 359   | 253   | 274     | 312        | 348      | 586       | 477       | 2,337  | 2,007   | 4,344  | 1.78                                     | 1.62    | 1.71   | 1.58   | 2       |
| 559   | 382   | 355     | 409        | 449      | 693       | 619       | 3,104  | 2,804   | 5,908  | 1.97                                     | 1.90    | 1.94   | 1.69   |         |
| 29    | 39    | 26      | 27         | 32       | 30        | 17        | 143    | 113     | 256    | .35                                      | .32     | .33    | .36  | 3       |
| 80    | 107   | 69      | 55         | 64       | 40        | 32        | 370    | 297     | 667    | .93                                      | .81     | .87    | .80  | 4       |
| 100   | 118   | 101     | 67         | 95       | 67        | 61        | 479    | 391     | 870    | 1.89                                     | 1.74    | 1.82   | 2.78   | 5       |
| 34    | 30    | 26      | 29         | 34       | 25        | 20        | 179    | 146     | 325    | .86                                      | .77     | .82    | 1.04   | 6       |
| 140   | 126   | 184     | 190        | 180      | 174       | 134       | 631    | 751     | 1,382  | 1.91                                     | 1.93    | 1.92   | 3.05   | 7       |
| 171   | 164   | 152     | 129        | 224      | 178       | 134       | 843    | 708     | 1,551  | 2.69                                     | 2.58    | 2.64   | 3.63   | 8       |
| 554   | 584   | 558     | 497        | 629      | 514       | 398       | 2,845  | 2,406   | 5,251  | 1.41                                     | 1.33    | 1.37   | 1.91   |         |
| 1,113 | 966   | 943     | 906        | 1,078    | 1,207     | 1,017     | 5,949  | 5,210   | 11,159 | 1.66                                     | 1.59    | 1.62   | 1.81   |         |

## IMPERIAL STATEMENT No. XI.—Deaths registered from

| Number.       | Districts.                 | Circles of Registration. |   | Villages.                |   | January. | February. | March. | April. | May. |
|---------------|----------------------------|--------------------------|---|--------------------------|---|----------|-----------|--------|--------|------|
|               |                            | Number in each district. | Number from which deaths from respiratory diseases were reported. | Number in each district. | Number from which deaths from respiratory diseases were reported. |          |           |        |        |      |
| 1             | 2                          | 3                        | 4   | 5                        | 6   | 7        | 8         | 9      | 10     | 11   |
| SURMA VALLEY. |                            |                          |   |                          |   |          |           |        |        |      |
| 1             | Cachar ... ..              | 12                       | 11  | 1,103                    | 127   | 59       | 51        | 50     | 84     | 98   |
| 2             | Sylhet ... ..              | 40                       | 39  | 10,781                   | 730   | 196      | 172       | 154    | 156    | 111  |
|               | Total ... ..               | 52                       | 50  | 11,884                   | 857   | 255      | 223       | 204    | 240    | 209  |
| ASSAM VALLEY. |                            |                          |   |                          |   |          |           |        |        |      |
| 3             | Goalpara ... ..            | 22                       | 15  | 2,137                    | 48  | 14       | 9         | 14     | 7      | 5    |
| 4             | Kamrup ... ..              | 15                       | 14  | 1,954                    | 45  | 30       | 18        | 38     | 50     | 25   |
| 5             | Darrang ... ..             | 13                       | 11  | 1,406                    | 191   | 63       | 66        | 63     | 70     | 56   |
| 6             | Nowgong ... ..             | 10                       | 10  | 1,495                    | 16*   | 9        | 17        | 15     | 11     | 10   |
| 7             | Sibsagar ... ..            | 15                       | 12  | 2,143                    | 229   | 103      | 86        | 85     | 130    | 97   |
| 8             | Lakhimpur ... ..           | 15                       | 14  | 1,702                    | 53  | 128      | 148       | 114    | 144    | 116  |
|               | Total ... ..               | 90                       | 76  | 10,837                   | 582   | 347      | 344       | 329    | 412    | 309  |
|               | Total for the Province ... | 142                      | 126   | 22,721                   | 1,439   | 602      | 567       | 533    | 652    | 518  |

\* Manzars.

## IMPERIAL STATEMENT No. XII.—Deaths registered from Plague

| Number.       | Districts.                 | Circles of Registration. |   | Villages.                |   | January. | February. | March. | April. | May. |
|---------------|----------------------------|--------------------------|---|--------------------------|---|----------|-----------|--------|--------|------|
|               |                            | Number in each district. | Number from which deaths from plague were reported. | Number in each district. | Number from which deaths from plague were reported. |          |           |        |        |      |
| 1             | 2                          | 3                        | 4   | 5                        | 6   | 7        | 8         | 9      | 10     | 11   |
| SURMA VALLEY. |                            |                          |   |                          |   |          |           |        |        |      |
| 1             | Cachar ... ..              | 12                       | ...   | 1,103                    | ...   | ...      | ...       | ...    | ...    | ...  |
| 2             | Sylhet ... ..              | 40                       | ...   | 10,781                   | ...   | ...      | ...       | ...    | ...    | ...  |
|               | Total ... ..               | 52                       | ...   | 11,884                   | ...   | ...      | ...       | ...    | ...    | ...  |
| ASSAM VALLEY. |                            |                          |   |                          |   |          |           |        |        |      |
| 3             | Goalpara ... ..            | 22                       | ...   | 2,137                    | ...   | ...      | ...       | ...    | ...    | ...  |
| 4             | Kamrup ... ..              | 15                       | ...   | 1,954                    | ...   | ...      | ...       | ...    | ...    | ...  |
| 5             | Darrang ... ..             | 13                       | ...   | 1,406                    | ...   | ...      | ...       | ...    | ...    | ...  |
| 6             | Nowgong ... ..             | 10                       | ...   | 1,495                    | ...   | ...      | ...       | ...    | ...    | ...  |
| 7             | Sibsagar ... ..            | 15                       | ...   | 2,143                    | ...   | ...      | ...       | ...    | ...    | ...  |
| 8             | Lakhimpur ... ..           | 15                       | ...   | 1,702                    | ...   | ...      | ...       | ...    | ...    | ...  |
|               | Total ... ..               | 90                       | ...   | 10,837                   | ...   | ...      | ...       | ...    | ...    | ...  |
|               | Total for the Province ... | 142                      | ...   | 22,721                   | ...   | ...      | ...       | ...    | ...    | ...  |



## APPENDIX II.

## PROVINCIAL.

Statement showing details of registration in compulsory areas.

| Compulsory registration area. | Population according to Census of 1921. | Estimated births at 286 per 1,000 married women between the ages of 15 and 40. | Number of births registered during the year. | Estimated birth-rate per mille. | Registered birth-rate per mille. | Number of deaths registered during the year. |                                | Death-rate per mille.          |                                | Number of prosecutions under Act IV (B.C.) of 1873. | Number of convictions. |
|-------------------------------|---|--|--|---------------------------------|----------------------------------|--|--------------------------------|--------------------------------|--------------------------------|---|------------------------|
|                               |   |  |  |                                 |                                  | Including deaths in hospitals.               | Excluding deaths in hospitals. | Including deaths in hospitals. | Excluding deaths in hospitals. |   |                        |
| 1                             | 2                                       | 3  | 4  | 5                               | 6                                | 7  | 8                              | 9                              | 10                             | 11  | 12                     |
| Silchar ... ..                | 10,204                                  |  | 251  |                                 | 24.60                            | 186  | 133                            | 18.23                          | 13.03                          | 2   | 2                      |
| Hailakandi ... ..             | 2,228                                   |  | 49   |                                 | 21.99                            | 36   | 31                             | 16.16                          | 13.91                          | 6   | 6                      |
| Sylhet ... ..                 | 16,912                                  |  | 462  |                                 | 27.32                            | 466  | 404                            | 27.55                          | 23.88                          | 7   | 7                      |
| Karimganj ... ..              | 4,552                                   |  | 116  |                                 | 25.48                            | 101  | 86                             | 22.18                          | 18.89                          | 15  | 12                     |
| Maulvi Bazar ... ..           | 3,334                                   |  | 77   |                                 | 23.09                            | 64   | 56                             | 19.19                          | 16.79                          | 14  | 14                     |
| Habiganj ... ..               | 5,918                                   |  | 194  |                                 | 32.78                            | 216  | 187                            | 36.49                          | 31.59                          | 2   | 2                      |
| Sunamganj ... ..              | 4,881                                   |  | 164  |                                 | 33.59                            | 123  | 112                            | 25.19                          | 22.94                          | 17  | 16                     |
| Dhubri ... ..                 | 6,707                                   |  | 229  |                                 | 34.14                            | 189  | 150                            | 28.18                          | 22.36                          | 15  | 10                     |
| Goalpara ... ..               | 6,212                                   |  | 215  |                                 | 34.61                            | 160  | 139                            | 25.76                          | 22.37                          | 20  | 16                     |
| Gauripur ... ..               | 4,311                                   | Not available.   | 176  | Not available.                  | 40.83                            | 126  | 126                            | 29.23                          | 29.23                          | 55  | 54                     |
| Gauhati ... ..                | 16,480                                  |  | 514  |                                 | 31.19                            | 558  | 391                            | 33.86                          | 23.72                          | 49  | 31                     |
| Barpeta ... ..                | 11,730                                  |  | 562  |                                 | 47.91                            | 419  | 399                            | 35.72                          | 34.01                          | 9   | 7                      |
| Tezpur ... ..                 | 7,341                                   |  | 211  |                                 | 28.74                            | 218  | 166                            | 29.69                          | 22.61                          | 40  | 34                     |
| Mangaldai ... ..              | 1,023                                   |  | 25   |                                 | 24.44                            | 29   | 13                             | 28.35                          | 12.70                          | 10  | 10                     |
| Nowgong ... ..                | 6,885                                   |  | 201  |                                 | 29.19                            | 201  | 118                            | 29.19                          | 17.13                          | 11  | 9                      |
| Sibsagar ... ..               | 5,329                                   |  | 207  |                                 | 38.84                            | 112  | 96                             | 21.01                          | 18.01                          | 34  | Not available.         |
| Nazira ... ..                 | 2,632                                   |  | 104  |                                 | 39.51                            | 70   | 70                             | 26.59                          | 26.59                          | 8   | 6                      |
| Jorhat ... ..                 | 6,626                                   |  | 194  |                                 | 29.28                            | 152  | 116                            | 22.94                          | 17.50                          | 7   | Not available.         |
| Golaghat ... ..               | 3,655                                   |  | 114  |                                 | 31.19                            | 92   | 73                             | 25.17                          | 19.97                          | 30  | 13                     |
| Dibrugarh ... ..              | 16,007                                  | 431  | 26.92  | 318                             | 177                              | 19.86  | 11.05                          | 22                             | 13                             |   |                        |
| Doom Dooma ... ..             | 1,162                                   | 28   | 24.09  | 26                              | 36                               | 30.98  | 30.98                          | ...                            | ...                            |   |                        |
| North Lakhimpur... ..         | 1,936                                   | 50   | 25.43  | 46                              | 34                               | 23.39  | 17.29                          | 4                              | 4                              |   |                        |
| Tinsukia ... ..               | 3,080                                   | 85   | 27.59  | 46                              | 46                               | 14.93  | 14.93                          | 11                             | Not available.                 |   |                        |
| Total ... ..                  | 149,175                                 |  | 4,659  |                                 | 31.23                            | 3,964  | 3,159                          | 26.57                          | 21.18                          | 388   | 266                    |

## GOVERNMENT OF ASSAM.

The Governor and the Minister of Local Self-Government.

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### Resolution on the Annual Public Health Report of the Province of Assam for the year 1924.

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*Extract from the Proceedings of the Governor of Assam and the Minister of Local Self-Government in the Local Self-Government Department, Public Health Branch, No. 2932L.S.G., dated the 16th June 1925.*

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READ—

The Public Health Report for the year 1924.

#### R E S O L U T I O N .

1. Although the climatic conditions of the year 1924 did not greatly vary from the normal and economic conditions compared not unfavourably with those of the previous year, there was a rise in the recorded provincial death-rate of 3·74 per mille, which was not fully compensated for by an increase in the birth-rate of 2·22. Concurrently the rate of infantile mortality also increased by 5·25 to 184·75 per thousand, but this still compares favourably with that of other major provinces. There were no epidemics of influenza or small-pox and the mortality from both these diseases as well as that recorded under respiratory diseases was lower than in 1923. The increase in the provincial death-rate was due mainly to the appearance of cholera in an epidemic form in several districts and to the spread of *kala azar*.

2. The number of cases of *kala azar* treated was considerably greater than that in 1923, and the number of reported deaths from the disease increased by nearly fifteen hundred. As the Director has pointed out, although a part of the increase can be attributed to better diagnosis there was a simultaneous rise in the number of deaths recorded under the general head of fevers. The recent surveys have in fact shown a widespread prevalence and indications of a recrudescence of *kala azar*, which but for the measures in force might well devastate areas again as in the nineties of the last century. The Governor and his Minister acknowledge gratefully the devotion and zeal displayed by the staff of the Department in the past, and look for even better results from the measures which are under contemplation for expanding the Department and using the new drugs more widely. The researches of the *kala azar* Commission were continued during the year. Until the life history of the parasite and its mode of transmission are known, measures must continue to be curative and not preventive.

3. The Government have under contemplation a scheme for the cheaper supply and wider use of anti-cholera vaccine on the appearance of epidemics, but they recognise the difficulty of stopping effectively by any treatment the onset of cholera epidemics which there is reason to believe are introduced from outside into the Assam Valley and in the Surma Valley are transmitted along the lines of communication from the endemic areas of Bengal and Sylhet. They look rather to the improvement of the water-supply and the concurrent spread of education for the prevention of the progress of the disease. Since the close of the year considerable sums of money have been voted by the Legislative Council for the improvement of the rural water-supply and these have been placed at the disposal of Local Boards. At the same time the Director of Public Health has drawn up in conjunction with the Red Cross Society schemes of propaganda which include instruction in the selection of pure drinking water and in other precautions against water-borne diseases. A scheme for the formation of mobile epidemic units or parties whose work will lie mainly in the supervision and purification of water-supplies is under examination.

4. The health of the tea gardens was again good, the death-rate from all causes being 4·28 lower than that of the province as a whole. The Governor and his Minister take this opportunity of congratulating the Tea Industry on the results of the careful supervision exercised over the health of the population in their charge, and observe with satisfaction that there were no epidemics and no deaths among immigrant labourers during transit.

5. There was no noticeable improvement in the reporting of vital statistics, but it is hoped that the measures now under contemplation, which include short and clear translations of the existing instructions and their wide dissemination to the reporting agencies, will bear fruit in the coming year.

6. Special anti-malarial measures were continued during the year at Pasighat, Lumding and Haflong, but no large schemes on these lines could be undertaken in the absence of funds. Since the close of the year an enquiry has been instituted into the possibility of cheapening the price of quinine, or in the alternative of rendering supplies of cinchona febrifuge available. The report of the Committee appointed to enquire into this subject is awaited.

7. There was only one meeting in the year of the Public Health Board, but the work of the Health Board (Epidemics) proceeded on the usual lines and there was constant discussion and co-ordination between the Medical and Public Health Departments.

8. The thanks of the Governor and his Minister are due to Major Murison and his staff for their able and zealous work in a year of considerable difficulty, and to Major Hanafin for his careful and illuminating report.

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ORDER.—Ordered that the Resolution be published in the *Assam Gazette*.

By order of the Government of Assam,

G. T. LLOYD,

*Offg. Second Secretary to the Government of Assam.*





